



QUARTERLY REPORT ON THE EURO AREA

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Highlights in this issue:

- Recent economic developments and short-term prospects
- Is the yield curve still predicting recessions?
- The Lisbon Agenda for the euro area: the 2007 update of the Integrated Guidelines
- Focus: The contribution of labour cost developments to price stability and competitiveness adjustment in the euro area
- Focus: The reduced volatility of output growth in the euro area

EUROPEAN
COMMISSION

DIRECTORATE-GENERAL FOR
ECONOMIC AND FINANCIAL AFFAIRS



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EDITORIAL

In 2006 the economic situation brightened substantially. GDP grew by 2.6% last year, up from 1.4% in the year before. This is the best performance since 2000 and clearly above potential growth which means that the output gap has improved significantly. In the last quarter of 2006, growth was balanced, driven by both domestic and external demand. Reflecting the positive growth momentum, the unemployment rate continued to edge down, falling to 7.4% in January 2007, the lowest level since 1993.

Business and consumer confidence remain at very high levels and forecasts for this year are positive. According to the Commission's interim forecasts, the euro-area economy should continue to grow robustly at 2.4% over 2007. But in the longer run, prospects could diminish due to some looming risks in the external environment. These include more sluggish growth in the USA, unfavourable exchange rate developments, potentially high and volatile oil prices and a disorderly unwinding of global imbalances. Moreover, the recent equity market turbulence is indicative of heightened financial market uncertainties. It is too early to tell whether this reflects a mere technical correction or the beginning of a more sustained period of weakness.

Euro-area Member States have not sat still during the past few years. Since the launch of the Lisbon strategy, more progress has been made with structural reform than is generally thought. In most euro-area countries the average tax wedge on labour has fallen and many countries have taken measures in the field of benefit systems in order to 'make work pay.' Eight euro-area countries introduced reforms to their public pension systems and many countries tightened early-retirement schemes. Many product markets have become considerably more competitive over the last five years, due inter alia to the liberalisation of network industries, the effects of competition policy and measures to make public interventions more efficient. Finally, a host of initiatives have been launched to foster research and the diffusion of new technologies.

As a result, the euro area has clearly regained strength. Part of the recent fall in the unemployment rate is cyclical in nature, but according to econometric estimates the structural rate of unemployment has come down as well. This is mirrored by the euro-area's employment growth, which accelerated to 1.4% in 2006 and yielded an increase of close to 2 million new jobs. Since the introduction of the euro more than 12 million jobs have been created in the euro area, more than in the US over the same period. These positive developments suggest that earlier labour market reforms are bearing fruit. Moreover, pension reforms coupled with changes to early retirement rules have already increased significantly the employment rate of older workers and have raised the effective retirement age by one year. Finally, there is a rebound in labour productivity growth and several factors suggest that this could be more than just a cyclical rebound. These are all tangible indications that the structural reforms undertaken in the last few years have started to pay off.

But it is important that we take advantage of favourable cyclical conditions to make further progress with structural reforms. These reforms are essential for all EU countries in order to raise their growth and job potential. But there is an extra dimension for euro-area countries. The single monetary policy has clearly contributed to macroeconomic stability in the euro area, but also requires the participating countries to adjust to country-specific economic shocks and competitiveness pressures without the help of national interest or exchange rate policies. This process does not yet function optimally, as is illustrated by the persistence of growth and inflation differences within the euro area and of current account imbalances in some Member States. It is true that the euro-area Member States' business cycles have become more aligned since the 1990s, reflecting inter alia increasing trade and financial integration, a common monetary policy and better fiscal policy. However, although growth differences have become somewhat smaller in 2006, they remain entrenched, indicating that the

adjustment to asymmetric shocks is slow and must be improved.

Against this background, it is important that Member States make further progress with reforms that increase the adjustment capacity of the euro area.

Firstly, it is important that Member States make full use of the favourable cyclical situation to speed up budgetary consolidation. It is only when countries have accomplished their medium-term objectives that they can weather any future cyclical downswing without exceeding the 3% reference value.

Secondly, improving the quality of public finances by reviewing public expenditures and taxation, with a view to enhancing productivity and innovation, can contribute to economic growth and fiscal sustainability.

Thirdly, more competition, especially in services, and integration and competition in financial retail services would improve the euro-area's adjustment capacity. Prices still adjust too slowly to changes in national cyclical conditions. In the services sector, prices are particularly rigid, not least because of a low level of competition. Greater financial integration would further smooth the impact of economic shocks on incomes and national credit markets.

Fourthly and finally, improving flexibility and security on labour markets could support the adjustment process, inter alia by better aligning wage and productivity developments, better balancing employment protection and security in the market and enacting measures to promote labour mobility across borders and between occupations.

Accordingly, these issues form the four recommendations addressed to the euro-area Member States in the 2007 update of the Integrated Guidelines, which was endorsed by the European Council during its meeting on 8 and 9 March. This Quarterly Report explains the rationale behind the four policy recommendations.



Klaus REGLING
DIRECTOR GENERAL



I. Economic situation in the euro area

The latest reading of the national accounts for the euro area shows that the strong GDP growth in the fourth quarter rounded off the remarkable growth performance for 2006. For the year as a whole, GDP grew by 2.6%, up from 1.4% in the year before. This was the best performance since 2000 and clearly above potential growth. As a result, the economy has registered its first significant improvement in the output gap since the beginning of the decade. In the last quarter of 2006, growth was balanced, driven by both domestic and external demand. Business and consumer confidence remain at a very high levels. Some easing is foreseen in the manufacturing sector in the coming months but growth will continue to be supported by strong momentum in the services sector. According to the Commission Services' February Interim Forecast, GDP growth should continue at a robust pace of about 2½% in 2007.

An inverted yield curve in the US and an almost flat curve in the euro area have drawn attention to the historical relationship between the yield curve and economic growth. In particular for the US, an inversion of the yield curve has been a "safe bet" predictor of an upcoming recession. This traditional relationship has now come into question, in both the US and the euro area. The main reasons for a possible structural break of the relationship are the exceptionally low level of bond yields, excess liquidity, the high credibility of monetary policy and the still low levels of policy interest rates compared to long-term or neutral levels. It may even be that a flat yield curve could be stimulating economic growth under the current circumstances of tightening monetary policy.

The last part of this chapter presents an economic analysis of the four policy recommendations addressed to the euro area as part of the 2007 Integrated Guidelines, which were endorsed by the European Council of 8 and 9 March. These recommendations include: (i) strengthening budgetary consolidation in good times; (ii) enhancing the quality of public finances; (iii) fostering competition, especially in services and; (iv) improving flexibility and security on labour markets.

1. Recent economic developments and short-term prospects¹

Strong growth in the last quarter of 2006

The economic situation in the euro area brightened substantially in 2006. After a slight deceleration in the third quarter of 2006 (0.6%), euro-area GDP accelerated to a very healthy 0.9% q-o-q in the last quarter, a significantly better outturn than projected in the Commission services' Autumn 2006 Forecasts (0.6%). At the same time, real GDP growth in the third quarter was revised upwards to 0.6%. For the year as a whole, GDP grew by 2.6%, up from 1.4% the year before. This was the best performance since 2000 and clearly above potential growth. As a result, the economy registered its first significant improvement in the output gap since the beginning of the decade.

Growth in the fourth quarter was broad-based across most euro-area countries. GDP growth was very buoyant in Germany, Italy and Spain (0.9%, 1.1% and 1.2% respectively). In France,

after a flat reading in the third quarter of 2006, growth rebounded to 0.6%.

Domestic demand driven by robust investment growth

As in previous quarters, domestic demand (excluding inventories) continued to fuel economic growth in the last quarter of 2006, accelerating slightly to 0.7%, compared to 0.6% in the previous quarter. It was primarily driven by a surge in investment spending. Gross fixed capital formation accelerated to a strong 1.2%, up from 0.6% in the third quarter. For the year as a whole, investment showed a robust growth momentum with a y-o-y growth of 4.5%.

The breakdown of investment spending by sector is not yet available for the last quarter of 2006. However, there is indirect evidence that growth in investment was underpinned in part by robust expansion in construction investment. Value added in the construction sector, which is generally closely linked to spending in construction, accelerated to 1.4% in the last quarter of 2006, compared to 1.1% in the previous quarter. Favourable weather conditions

¹ The cut-off date for the statistics included in this issue was 22 March 2007.

Table 1: Euro-area growth components

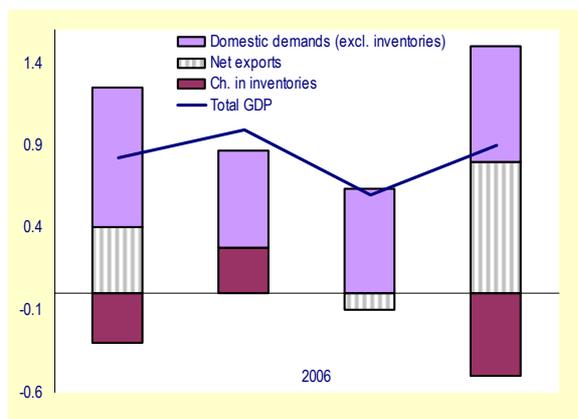
	2006 Q1	2006 Q2	2006 Q3	2006 Q4	Carryover to 2007	Forecast (1)	
						2006 (2)	2007 (2)
Percentage change on previous period, volumes							
GDP	0.8	1.0	0.6	0.9	1.2	2.6	2.1
Private consumption	0.6	0.3	0.7	0.5	0.8	2.0	1.6
Government consumption	1.4	0.0	0.6	0.5	0.7	2.0	1.4
Gross fixed capital formation	0.8	2.1	0.6	1.2	1.7	4.3	3.0
Changes in inventories (% of GDP)	0.0	0.3	0.4	-0.3	-0.4	0.2	0.4
Exports of goods and services	3.1	0.9	1.8	3.7	3.9	7.9	6.0
Imports of goods and services	2.3	0.8	2.2	1.9	2.7	7.5	5.7
Percentage point contribution to change in GDP							
Private consumption	0.3	0.2	0.4	0.3	0.5	1.1	0.9
Government consumption	0.3	0.0	0.1	0.1	0.1	0.4	0.3
Gross fixed capital formation	0.2	0.5	0.1	0.3	0.4	0.9	0.6
Changes in inventories	-0.3	0.3	0.0	-0.6	-0.4	-0.1	0.1
Net exports	0.4	0.0	-0.1	0.8	0.6	0.3	0.2

(1) Annual change in %. (2) European Commission Autumn 2006 Forecasts.

Source: Commission services.

in the last quarter of 2006 probably played a positive role. Combining data on total investment with estimates of construction spending suggests that equipment investment (which accounts for half of total investment) also grew healthily in the fourth quarter (about 1%).

Graph 1: Contributions to real GDP growth, euro area (q-o-q % point contributions)



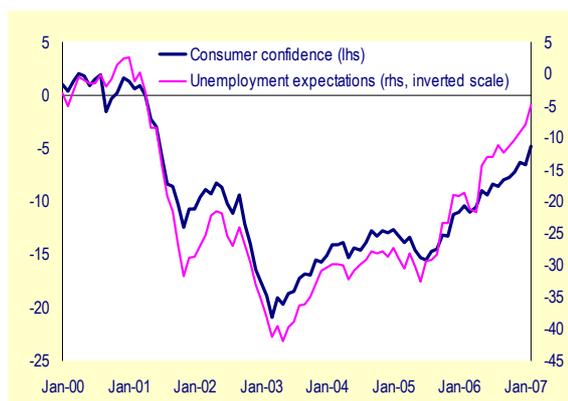
Source: Commission services.

Fourth quarter GDP data features a very strong export growth performance (+3.7% q-o-q) which seems to have taken manufacturers as well as economists by surprise. The surge in exports was met as much by a strong inventory draw-down as by additional production, particularly in Germany. This strong reduction in inventories had a clear downward effect on growth. Including changes in inventories, domestic

demand increased by only 0.1%. After such a large draw-down, a strong positive contribution by the inventories can be expected in the first quarter of 2007 as manufacturers replenish their stocks.

Private consumption continued to expand at a relatively solid pace. It increased by 0.6% in the fourth quarter of 2006 and data for the third quarter was revised upwards to 0.7%.

Graph 2: Consumer confidence, euro area (Balance in % – Jan 2000 to Feb 2007)



Source: Commission services.

Household spending is clearly being fostered by an improving outlook for the labour market. Employment in the euro area increased by 0.3%(quarter-on-quarter) in the third and fourth quarters of 2006. For the year as a whole,



Table 2: Real GDP growth, euro area
(Interim Forecast February 2007)

	Quarterly GDP forecast (%, quarter-on-quarter)				Annual GDP forecast (%, year-on-year) 2007	
	2007/1	2007/2	2007/3	2007/4	Interim forecast (February 2007)	Autumn forecast (Nov. 2006)
Germany	-0.5	0.8	0.7	0.6	1.8	1.2
Spain	0.9	1.0	0.9	0.8	3.7	3.4
France	0.5	0.6	0.5	0.5	2.2	2.3
Italy	0.3	0.3	0.3	0.3	2.0	1.4
Euro area	0.3	0.7	0.6	0.6	2.4	2.1

Source: Commission services.

employment increased by 1.4%, the highest rate since 2001.

In line with these developments, consumer confidence picked up in February, reaching high levels last observed in 2001, while households' future employment expectations are reaching levels last achieved in April 2001 (Graph 2).

The continuous improvements in the labour market combined with a possible modest rise in wages and lower energy prices should translate into a further increase in households' purchasing power and consumption in the first quarters of 2007.

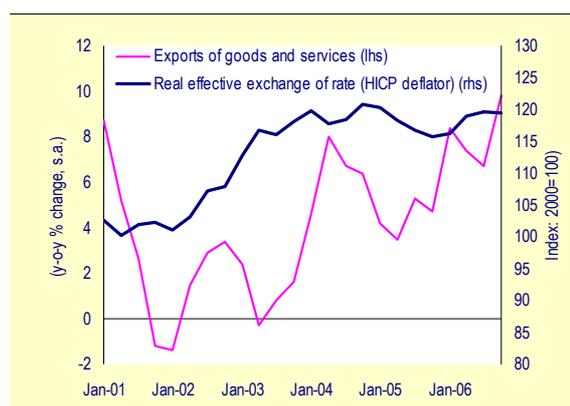
A strong contribution from net trade

Net trade, and particularly strong export growth was the main contributor to euro-area growth in the last quarter of 2006. Euro-area exports increased sharply (3.7% q-o-q) as a result of a strong increase in extra-euro-area exports. This increase in export growth was broad-based across euro-area countries. In Germany, exports grew at a spectacular rate of 6%, up from the already high 4.5% in the third quarter. At the same time, imports in the euro area rose by 1.9%, compared to 2.2% in the third quarter.

Euro-area trade clearly continued to benefit from buoyant world trade. According to the latest estimates of the CPB Netherlands Bureau of Economic Policy Analysis, world trade increased by 10.1% (q-o-q annualised) in the last quarter of 2006, marginally down from 10.7% in the third quarter. Emerging economies remained the most dynamic region. Trade developments in these

countries offset the sluggish trade performances of the US and Japan.

Graph 3: Exports and real effective exchange rate, euro area (monthly data Jan 2001 to Oct 2006)



Source: Commission services.

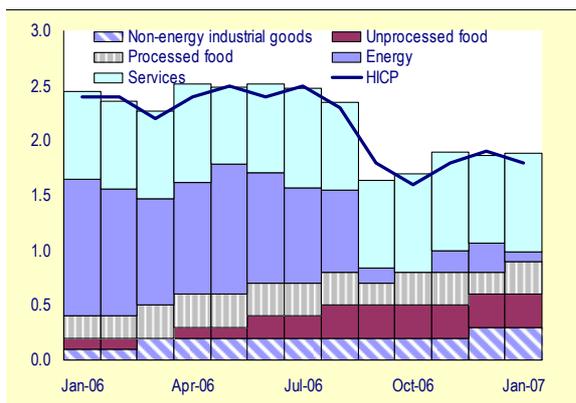
In 2007, the US economy is expected to grow at an annual rate of 2.3%, compared to 3.3% in 2006, as the slowdown in the housing market dampens consumer spending. Nevertheless, global economic growth should remain solid and world trade should keep expanding at a robust pace, though likely somewhat less rapidly than in 2006. Indeed, most recent survey indicators of the world economy continue to point to a period of strong momentum over the coming months, suggesting that the moderation of global economic activity should remain limited in the short term. The January reading of the quarterly World Economic Survey indicates an improvement of expectations for the next six months, after a couple of quarters of declining expectations. In line with this, the February Global Manufacturing PMI pointed to a recovery

in global manufacturing from the downward trend observed since mid-2006. Moreover, according to the European Commission's manufacturing survey, export prospects for euro-area manufacturers remain close to their all-time record highs.

Inflation remains moderate

According to Eurostat's latest flash estimate, euro-area HICP inflation remained stable at 1.8% year-on-year in February. These figures are below the expected inflation data for the beginning of 2007.² This can be attributed to the VAT hike in Germany having a weaker impact than expected and to lower than expected energy prices. Core inflation, however, rose from 1.8% to 1.9% in February due to the VAT hike.

Graph 4: Contributions to headline inflation
(y-o-y changes in % - Jan 2006 to Jan 2007)



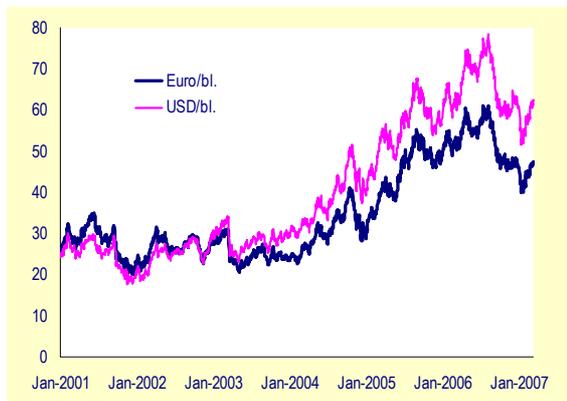
Source: Commission services.

Energy price, which had been an important source of price pressures during the first half of last year have lost steam. At the beginning of 2006, the direct contribution of energy inflation to headline was about 1 percentage point (Graph 4). Since September 2006, the contribution has declined substantially to reach less than 0.1 percentage points in January 2007. This developments mirror a fall in the price of the barrel of Brent from an average of USD 70 in January 2006 to USD 54.6 in January 2007 (Graph 5). In addition, the fact that core inflation remained quite stable at around 1.5% in 2006

² The European Commission's Autumn 2006 Forecast predicted HICP inflation of 2.4% in the first quarter of 2007.

suggests that second-round effects from past energy price hikes have been and are likely to remain limited.

Graph 5: Oil price developments
(1 Jan 2001 to 08 Mar 2007)



Source: Commission services.

The services sector is now the main contributor to inflation, with a persistently large contribution of 0.9 percentage point to headline inflation. Since mid-2006, due to adverse weather conditions, the contribution of unprocessed food has been increasing, partly offsetting the lower impact of energy. The two remaining categories, processed food and non-energy industrial goods, have only had a small impact on inflation developments.

Turning to price expectations, evidence from manufacturing and household surveys is consistent with benign inflation developments in the months ahead. Industrial managers expect stable price pressures in the coming months while consumers even anticipate an easing of inflation over the next year.

Despite favourable labour market developments, wage growth has so far remained moderate.³ The various labour costs indicators show continued moderation in the third quarter of 2006 (last available data). Looking ahead, the Commission's Autumn 2006 Forecast predicts a slight acceleration of wages due to new wage agreements being implemented in selected countries. These moderate upward pressures will

³ See the focus section on 'Contribution of labour cost developments to price stability and competitiveness adjustment in the euro area' in this issue for a detailed discussion.



Table 3: Selected euro-area and national leading indicators, 2005-2006

	SENT. IND ¹⁾	BCI ²⁾	OECD ³⁾	PMI Man. ⁴⁾	PMI Ser ⁵⁾	IFO ⁶⁾	NBB ⁷⁾	ZEW ⁸⁾
Long-term average	100.9	0.00	2.77	52.6	54.8	96.6	-7.8	27.9
Trough in latest downturn	88.1	-1.25	-0.77	42.9	46.7	87.3	-26.5	-10.4
February 2006	102.8	0.5	4.4	54.5	58.2	104.8	1.6	69.8
March 2006	103.5	0.8	4.5	56.1	58.2	105.6	0.3	63.4
April 2006	106.0	1.1	4.8	56.7	58.3	105.4	6.4	62.7
May 2006	107.0	1.0	4.8	57.0	58.7	103.9	1.4	50.0
June 2006	107.4	1.4	4.2	57.7	60.7	104.1	10.6	37.8
July 2006	108.3	1.3	3.4	57.4	57.9	102.6	5.6	15.1
August 2006	107.4	1.2	3.0	56.6	57.4	101.4	3.3	-5.6
September 2006	108.9	1.4	2.5	56.6	56.7	98.9	5.0	-22.2
October 2006	110.0	1.4	2.4	57.0	56.5	99.2	2.4	-27.4
November 2006	109.9	1.5	2.2	56.6	57.6	100.2	4.1	-28.5
December 2006	109.8	1.6	1.9	56.5	57.6	102.5	2.4	-19
January 2007	109.2	1.4		55.5	57.9	103.2	1.1	-3.6
February 2007	109.7	1.6		55.6	57.5	102.6	2.0	2.9

1) Economic sentiment indicator, DG ECFIN. 2) Business climate indicator, DG ECFIN. 3) Composite leading indicator, six monthly change. 4) Reuters Purchasing Managers Index, manufacturing. 5) Reuters Purchasing Manager Index, services. 6) Business expectations, West Germany. 7) National Bank of Belgium indicator for manufacturing. 8) Business expectations of financial market analysts, Germany.

not materialise before next year, however, with wage growth increasing from 2.2% in 2007 to 2.5% in 2008. Unit labour costs remained stable at 0.8% in the third quarter of 2006, suggesting that inflationary pressures stemming from the labour market remain subdued.

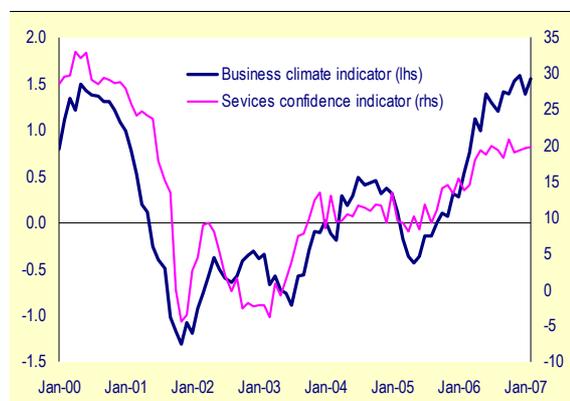
Business confidence remains strong

Manufacturing confidence indicators remain remarkably high. After a decline in January, the European Commission's Business Climate Indicator for the euro area rebounded in February, reaching record highs once again (Graph 6). This was the result of a more optimistic assessment of past production trends and order books. However, managers' production expectations weakened somewhat. The Reuters PMI index for manufacturing activity slightly increased in February (from 55.5 to 55.6) after a one-point decrease in January.

While industrial production growth was nearly flat in October and November 2006, it sharply accelerated in December (1.2% m-o-m), suggesting that the underlying trend remains strong. The latest Eurostat press release shows, however, that industrial production in January decreased by 0.2%. This lower-than-expected figure should be interpreted with caution since it

may reflect some seasonal-adjustment problems, and also masks large differences between Member States. Industrial production contracted strongly in Italy and the Netherlands (-1.4% and -4.3% month-on-month respectively). However, it increased strongly in Germany (1.7%) which is in line with the large contraction in inventories observed in that country in the last quarter of 2006.

Graph 6: Business confidence indicators, euro area
(Balance in % – Jan 2000 to Feb 2007)



Source: Commission services.

In the services sector, activity was buoyant in the last quarter of 2006, suggesting that this sector's role in the euro area's economic growth is increasing. Looking ahead, the European Commission's survey shows a stabilisation of confidence in the services sector in January and February, above its long-term average (Graph 6). Reuters Service Index displayed a small drop in February after an increase in January, but it remains well above its long-term average. With sentiment indicators continuously pointing to robust growth and with domestic demand gaining momentum, activity in the services sector should remain strong in the next few months.

By contrast, developments in the construction and retail sectors' indicators point to some loss of momentum in these sectors. In February, the confidence indicator for the construction sector recorded its third consecutive decline. While the indicator remains at a high level, it seems to have passed its peak. This is at odds with the value added in the construction sector, which accelerated to 1.4% in the last quarter of 2006, compared to 1.1% in the previous quarter. But it is in line with a probable easing of housing demand in the euro area as a result of high house prices and rising mortgage rates.

In February, the confidence indicator for the retail sector recorded its fourth consecutive and now stands significantly below its peak. The decrease in February mainly resulted from a sharp decrease in confidence among retailers in Germany. This is not surprising as retail sales in Germany dropped by 5.1% month-on-month in January after a 2.6% increase in December. The strong fall was clearly a reaction to the VAT hike. The survey seems to indicate that the retail sector has passed its peak. However, one should be cautious about drawing any conclusions on future consumption. First, the VAT hike in Germany has clearly blurred the picture in February. Second, the capacity of retail surveys to predict future consumption has proved to be quite poor.

Short-term outlook and risks

According to the Commission services' Interim Forecast released on 16 February, economic growth should continue at a robust pace, though moderating to 2.4% in 2007. This represents a 0.3 percentage point upward revision compared with the Commission services' Autumn 2006 Forecast. The revision is mostly due to the stronger-than-expected carry-over from 2006, coupled with a slightly higher growth profile for 2007. GDP growth is expected to moderate temporarily in the first quarter of 2007, mainly reflecting developments in Germany. It should then rebound to around 0.6% during the remaining quarters of the year.

Regarding prices, the forecast has been revised downwards, with HICP inflation now projected to average 1.8% in 2007, i.e. 0.3 percentage points lower than in the autumn 2006 forecast. The more optimistic outlook for inflation is mainly the result of the rather moderate impact of the German VAT hike and the expected easing of oil prices.

On the domestic side, the near-term risks to the favourable growth outlook seem to be balanced. With steady improvements in the labour market, labour income could increase more than expected, which could lead to higher-than-expected household consumption. In line with improvements in the labour market, real wage increases could go beyond productivity increases and therefore have an upward effect on prices.

Over a longer horizon, downside risks seem to prevail and to be related to the external environment. First, a sharper-than-expected US slowdown could hamper growth in the global economy. Second, due to the recent turbulence in the global equity markets, uncertainties regarding global financial markets have increased (see Box 1). In the US, there is also a risk that the observed deterioration in the sub-prime mortgage market spills over to other parts of the financial sector. Third, a further appreciation of the euro/dollar exchange rate could erode the competitiveness of euro-area exports. Fourth, oil prices could remain volatile during 2007 due to continued risks of geopolitical tensions. Finally, the disorderly unwinding of global imbalances continues to be a threat to the global growth outlook.



Box 1: Winter storms on financial markets

In the first two months of 2007, financial markets were characterised by a continuation of favourable trends, with buoyant stock markets and low volatility on bond and foreign exchange markets. In the last week of February, though, stock markets dropped significantly, amidst increased investor risk aversion and volatility.

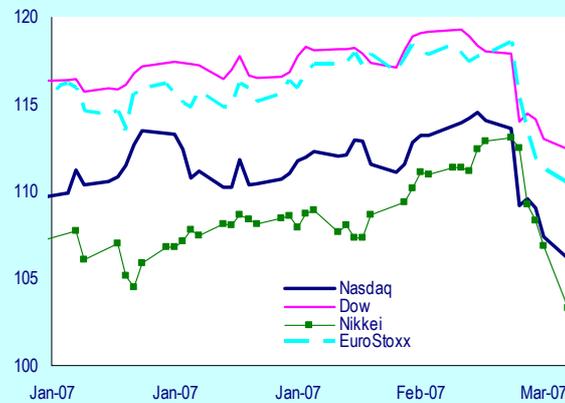
Stock markets tumbled worldwide at end-February

As with the episode of market turbulence in mid-2006, the initial fall in equity prices drop was short-lived. There was evidence of a stabilisation in prices after the initial drop, followed by a second decline shortly after. Overall, equity prices are significantly lower than at the beginning of the turbulence. By 14 March, the EuroStoxx had lost more than 8% since the beginning of the turmoil on 26 February. Other major stock markets were down by between 4% (Dow Jones) and 8% (Nikkei). Since then, stock markets have slightly recovered and offset some of their losses.

Several explanations were brought forward for triggering the market tumble. There had been a steady rise in global equity market prices in the preceding weeks, which did not seem based on economic fundamentals. The abrupt decline in equity prices in China was then triggered by investor nervousness following the authorities' establishment of a special task force to tackle illegal securities activity and media reports of a possible monetary-policy tightening. The latter development was seen as implying a prospective slowdown in the global economy. Uncertainty about the global economy was intensified by some weaker US economic data, with durable goods orders falling by more than expected and the US housing market remaining subdued with problems in the US mortgage market. Investor sentiment was undermined by reports that Alan Greenspan had spoken of a possible recession in the US economy in 2007. While none of these factors alone would have been expected to impact heavily on financial markets, their combined effect on investor confidence may have been enough to provoke the widespread market turbulence.

Stock indices

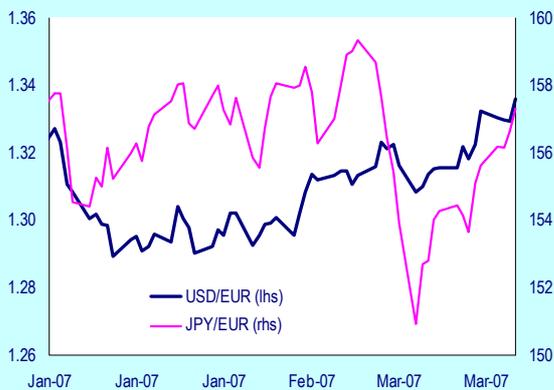
(Index 3/1/06=100, 2 Jan 07 to 22 Mar 07)



Source: Commission services.

Euro exchange rates

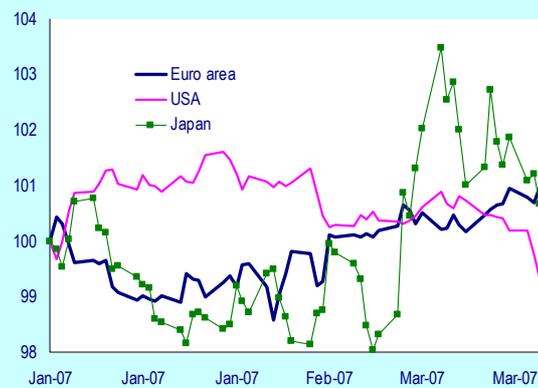
(2 Jan 07-22 to Mar 07)



Source: Commission services.

Nominal effective exchange rate

(Double export weights, index 1/1/07=100, 2 Jan 07 to 22 Mar 07)



Source: Commission services.

Safe haven effects drive government bond yields down

As investors fled to safety, major bond markets gained, resulting in falling yields in the US, Europe and Japan. In contrast, emerging-market debt yield spreads (as measured by the benchmark JP Morgan EMBI+ index) widened to almost 200 basis points, up from the record low 164 basis points recorded just before the outbreak of the market jitters. The spread reached 240 basis points during the market turmoil in May and June 2006.

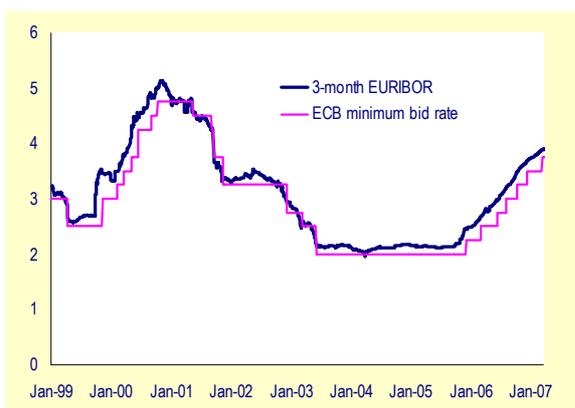
Stock market turmoil leads to unwinding of carry trade

As a consequence of the stock market turmoil, foreign exchange markets were temporarily dominated by the massive unwinding of carry trades. Between the beginning of the turmoil and its (temporary) trough, the yen gained almost 5% against the US dollar and the euro and as much as 7 to 9% against high-yield currencies such as the South African rand, the Turkish lira, the New Zealand dollar and the Brazilian real. In nominal effective terms, the yen gained some 5% until 5 March. Other low-interest currencies including the Swiss franc and the Czech koruna also appreciated, albeit to lesser extent. As stock markets stabilised in the second week of March, currency movements ebbed as well financial market participants seemed to restore carry-trade positions and the yen lost most of its earlier gains.

Monetary and financial conditions

Since December 2005, the Governing Council of the ECB has raised interest rates by a total of 175 basis points to presently 3.75%. The last rate hike was decided on 8 March 2007. The ECB decisions to hike interest rates were motivated by upside risks to price stability, identified by the Governing Council through both the economic and monetary analyses. Moreover, the interest rate hikes should anchor medium to longer-term inflation expectations in the euro area at levels consistent with price stability.

Graph 7: ECB minimum bid rate and 3-month EURIBOR (in % – 4 Jan 99 to 22 Mar 07)



Source: Commission services.

Although interest rates are still at relatively low levels, the policy rate hikes have led to some further tightening of monetary conditions in the

euro area as measured by a Monetary Conditions Index (MCI).

Graph 8: Euro-area MCI and its contributors (Index Jan 1999=100 – Inverted scale – Jan 99 to Feb 07)



Source: Commission services.

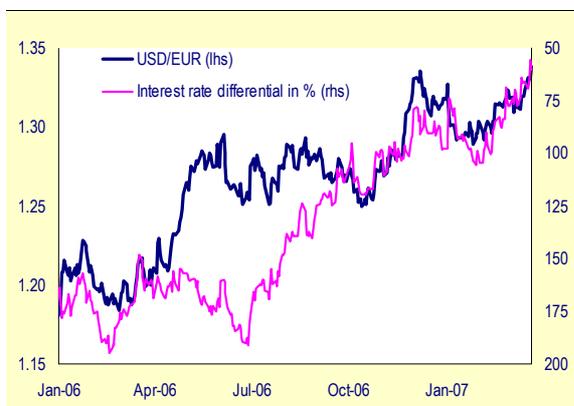
Since the beginning of the year, the dollar-euro exchange rate has for most of the time fluctuated around USD/EUR 1.30. After the G7 meeting in Essen in mid-February, the euro staged a mini-rally, bringing the bilateral rate slightly above USD/EUR 1.31. The euro reached an all-time high against the yen on 22 February when it stood at JPY/EUR 159.5. In the wake of the stock market turbulences, the yen (temporarily) reversed some of its losses. While the bilateral dollar-euro exchange rate remained relatively stable during the stock market turbulences, the euro continued its rally against the US and climbed above USD/EUR 1.33 (see also Box 1).



In general, foreign exchange movements are still mainly determined by (expected) interest rate developments and hardly by concerns about global imbalances. The good data for GDP growth in the fourth quarter of 2006 in the euro area and an improved outlook for 2007 in conjunction with market expectations of further interest rate hikes in the euro area supported the euro. In addition, lower-than-expected economic data weakened the US dollar.

interest rates, 10-year-government-bond yields in the US have declined by around 30 basis points since early February, while they only lost 20 basis points in the euro area. As a consequence, the interest rate differential narrowed to around 60 basis points, the lowest level since early 2005. The downward trend of government bond yields was intensified in recent weeks in the wake of the financial market turmoil (see box 1).

Graph 9: USD/EUR exchange rates and interest rate differential (1 Jan 06 to 22 Mar 07)



Source: Commission services.

Graph 10: 10-year government bond yields (in % – 2 Jan 06 to 22 Mar 07)



Source: Commission services.

The opposing news in the euro area and the US since February resulted in a narrowing of (expected) interest rate differentials across the whole maturity spectrum. As regards long-term

2. Is the yield curve still predicting recessions?

Tightening monetary policy and declining long-term interest rates have recently drawn attention to the empirical relationship between the yield curve and economic growth, in particular recessions. This discussion started in the US, where the Fed raised the federal funds rate in 17 consecutive meetings from June 2004 to July 2006, taking it from 1% to its current level of 5.25%. At the same time, long-term interest rates declined during most of 2004 and 2005, leading to an inverted yield curve. With some delay, the phenomenon of a flattening yield curve also emerged in the euro area where the ECB has progressively increased interest rates since December 2005 from 2% to 3.75% in March 2007. Falling long-term interest rates in most of the second half of 2006 also contributed to the flattening of the yield curve.

Historically, pronounced yield curve inversions in the US and the euro area have tended to be followed by recessions about a year later. Since the yield curve has typically outperformed other recession indicators, it is an important variable to monitor.

This section begins with a conceptual discussion of the yield curve and its relationship to real economic activity. It then reviews the predictive power of the US and euro-area yield curve and discusses what the present shape of the yield curve might tell us.

Theoretical explanations for the relationship between the yield curve and growth

The yield curve is the difference between long and short-term interest rates. In the following analysis, the yield curve is always defined as the difference between 10-year-government-bond yields and three-month treasury bills. The yield curve normally has a positive slope with long-term interest rates higher than short-term rates. This relationship reflects increasing risk premia as both inflation and the future health of the borrower become more uncertain as the time span extends. The gap between long and short-term interest rates, however, fluctuates considerably over time, and at times becomes

negative. Empirical research has shown that an inverted yield curve has preceded all recessions but one in the US since 1960.

The literature on the yield curve's ability to predict recessions has been predominantly empirical, documenting correlations rather than building theories to explain such correlations. This focus on empirics may have created the unfortunate impression that there is no good explanation for the relationship. In fact, there is no shortage of reasonable explanations, many of which date back to the early literature on this topic and have now been extended in various directions. The literature presents two main explanations related to (i) monetary policy and; (ii) inter-temporal consumer choices.⁴ These explanations are to a large extent compatible and, viewed in their totality, suggest a robust relationship between the yield curve and recessions.

Monetary policy influences the slope of the yield curve. A tightening of monetary policy means a rise in short-term interest rates, typically intended to lead to a reduction in inflationary pressures. Whereas short-term interest rates are relatively high as a result of the tightening, long-term interest rates reflect long-term inflation expectations and real interest rates. A rise in short-term interest rates induced by monetary policy could be expected to lead to a future slowdown in real economic activity and demand for credit, putting downward pressure on future real interest rates, while slowing activity may also result in lower expected inflation.

Another reason for an inverted yield curve before a recession is based on inter-temporal consumer choices.⁵ A central assumption is that

⁴ See for example Estrella, A. (2005), 'The Yield Curve as a Leading Indicator: Frequently Asked Questions', Federal Reserve Bank of New York, capital markets web page. Moneta, F. (2003), 'Does the yield spread predict recessions in the euro area?' ECB Working Paper No. 294, December 2003. Estrella, A, A. Rodrigues and S. Schich (2000), 'How stable is the predictive power of the yield curve? Evidence from Germany and the United States', *Review of Economics and Statistics*, Vol. 85, No. 3, August 2003.

⁵ See Harvey, C. (1988), 'The real term structure and consumption growth', *Journal of Financial Economics*, Vol. 22. Hu, Z. (1993), 'The yield curve and real activity', IMF Staff Paper No. 40.

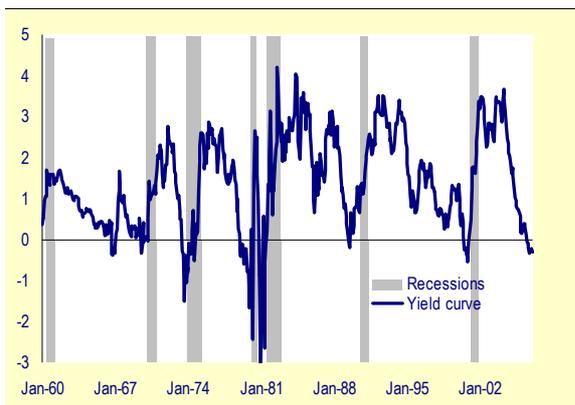


consumers prefer a stable income. In a simple model where only bonds are available as financial security, consumers who rationally anticipate a recession will increase current savings in order to boost future income. As a consequence, long-term interest rates will go down and short-term interest rates will increase due to a shift in preferences.

Predictive power of yield curve is supported by data...

The slope of the yield curve obviously depends on movements in both short and long-term interest rates. However, there is no fundamental reason why a rise in the level of current short-term interest rates should have the same predictive content for a recession as a fall in average expected future nominal interest rates over, say, the next ten years. A look at the US shows that a flattening of the yield curve and a subsequent inversion has always been preceded by a sharp increase in short-term interest rates (see Graph 11). However, rising policy rates have not necessarily led to a flattening of the yield curve, which indicates that the long end of the yield curve matters as well.⁶

Graph 11: US yield curve and recessions
(in % – Jan 1960 to Feb 2007)



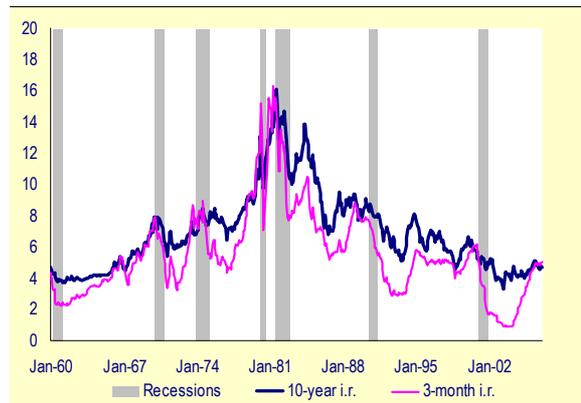
Source: Commission services.

⁶ This is already clear from the fact that a sharp monetary tightening is not always followed by a recession.

...not only in the United States...

The analysis of the behaviour of interest rates of different maturities over the business cycle goes back to the beginning of the 20th century.⁷ Since then, a vast number of studies have been published on the predictive power of the yield curve in the US.⁸ All of these papers find highly significant relationships between the yield curve and real activity with lead times ranging roughly from 1 to 8 quarters. It is noteworthy that, in many studies, the yield curve comes out as the best single predictor of recessions compared with other indicators. However, its overall predictive power remains somewhat limited. In particular, it is worth stressing that inversions of yield curves have not always been followed by recessions so that the yield curve has sometimes sent false recession signals.

Graph 12: US 10-year, 3-month interest rates and recessions
(in % – Jan 1960 to Feb 2007)



Source: Commission services.

Graph 12 illustrates the relationship between the yield curve and recessions. The dates of US recessions are those officially determined by the National Bureau of Economic Research (NBER) which defines a recession as a significant decline in activity spread across the economy, lasting

⁷ Mitchell, W. (1913), 'Business cycles', University of California Press.

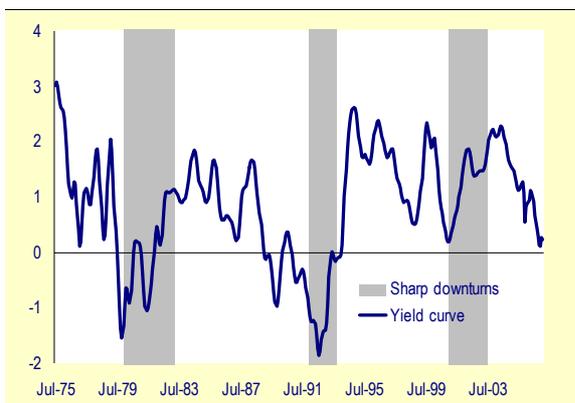
⁸ See for example Mishkin, F. (1990), 'What does the term structure tell us about future inflation?', *Journal of Monetary Economics*, No. 25. Estrella, A. and G. Hardouvelis (1991), 'The term structure as a predictor of real economic activity', *Journal of Finance*, Vol. 46, No. 2. Estrella, A. and F. Mishkin (1998), 'Predicting US recessions: financial variables as leading indicators', *Review of Economic and Statistics*, Vol. 80, No. 1. Estrella (2005), *ibid.*

more than a few months, visible in industrial production, employment, real income and wholesale retail trade.

...but also in the euro area

While some studies provide additional evidence of the relationship between the yield curve and economic recessions for some countries of the European Union, only a very few studies on the euro area as a whole have been conducted.⁹ This is often related to the lack of sufficiently long time series for the euro area and the fact that the euro area so far has only experienced one business cycle which did not include a technical recession. In fact, even when using a constructed euro-area aggregate for the pre-EMU period, the last recession (defined as two consecutive quarters of declining GDP) would date back to 1992/93.

Graph 13: The yield curve and sharp downturns, euro area (in % – Jan 1975 to Feb 2007) (1)



(1) Sharp downturns are identified by applying a Baxter-King filter to euro-area GDP data.

Source: ECB, Commission services.

To get some idea of the relationship between the yield curve and economic growth in the euro area, Graph 13 plots the euro-area yield curve against the three major cyclical downturns experienced since the 1980s.¹⁰ Two out of the

⁹ See for example Estrella, A. and F. Mishkin (1997), The predictive power of the term structure of interest rates in Europe and the United States: Implications for the European Central Bank, European Economic Review, No. 41 and Estrella, A., A. Rodrigues and S. Schich (2003), op. cit.

¹⁰ The major downturns were identified by extracting the cyclical component of euro-area GDP with a Baxter-King

three downturns were preceded by an inversion of the yield curve. In the case of the most recent downturn in 2001, the yield curve was close to flat.

Data for the euro before 1999 should of course be considered with prudence. The yield curve for the euro area before 1999 is hypothetical and is strongly affected by changes in monetary policy regimes across both time and Member States. Graph 14 therefore displays the yield curve and recessions for Germany, taken here as a proxy, since the relation between its yield curve and growth should be less blurred by statistical problems. As illustrated by the chart, all four recessions in Germany since 1970 were preceded by an inverted yield curve.¹¹

Graph 14: The yield curve and recessions, Germany (in % – Jan 1975 to Feb 2007)



Source: Commission services.

The current situation seems to be different from the past

The above suggests that at the current juncture, the inverted yield curve in the US and the virtually flat curve in the euro area should predict an economic recession on both sides of the Atlantic in the course of 2007.

filter. The periods shown correspond to the interval from peak to trough. Only downturns with losses of output gap of more than 2% were considered. With this procedure, the early 2000s downturn qualifies as a major downturn although it did not include a technical recession (i.e. at least two consecutive quarters of declining GDP).

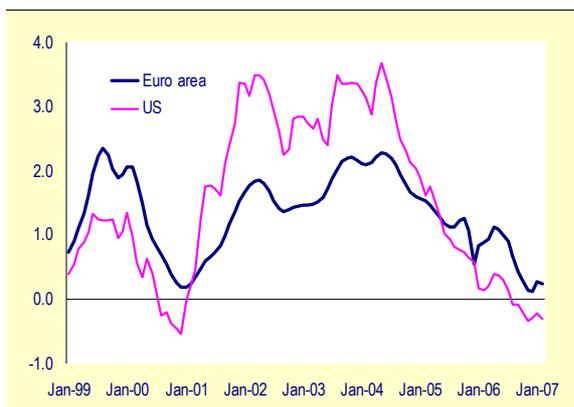
¹¹ In the chart, recessions were defined as at least two consecutive quarters of declining GDP.



A more formal approach to the predictive power of the yield curve (see Box 2) shows that for the US, there is presently a 40 percent chance of a recession one year from now. This is a much lower probability than in the periods preceding the recessions of the 1970s and 1980s but similar to the probability before the last two recessions, in the 1990s and early 2000s. The probability for the euro area is of the same magnitude as for the US. However, the estimates for the euro area might be distorted as it formerly encompassed different monetary regimes as well as slightly different business cycles. The formal approach for the euro area showed that there has been more "noise" between downturns.

Germany is therefore also taken as a proxy in this case. Here, the yield curve currently attributes only a 10 percent probability to a recession 12 months from now. However, when interpreting the result for Germany, one needs to bear in mind an important caveat. Since 1999, the short-term interest rates have been determined by the ECB for the euro area as a whole. Short-term interest rates and hence the yield curve in Germany might have been different, had there still been a national monetary policy.

Graph 15: Yield curves in the euro area and the US
(in % – Jan 1999 to Feb 2007)



Source: Commission services.

The current debate is also casting doubt more generally on the usefulness of the yield curve as a predictor of future growth.¹² Broadly speaking,

¹² See Greenspan (2005), *Letter to the Honourable Jim Saxton, Chairman of the Joint Economic Committee*, 28 November 2005. Estrella (2005), op.cit. Bernanke (2006), *Reflections on the Yield Curve and Monetary Policy, remarks before the Economic Club of New York*, Federal Reserve Board, 20 March 2006.

there are two main factors suggesting that the current flattening of the yield curve might be explained by other factors than the imminence of a recession: namely the exceptionally low level of bond yields and monetary policy.

Several global factors – often interrelated – have been put forward to explain the evolution in global long-term rates in recent years.¹³ These factors include: (i) the mis-pricing of risks due to a coincidence of excess liquidity in the international financial system and investor search for yield; (ii) Asian central bank purchases of US Treasury bills to maintain their currency pegs; (iii) underinvestment in the corporate sector; (iv) the prospect of population ageing, putting pressure on pension funds to make significant additions to longer-term bond portfolios; (v) oil bill recycling, and (vi) the fact that in reaction to higher oil prices, financial market participants seem to price in lower growth rather than higher inflation.

The flattening of the yield curve might also signal a deceleration in inflation accompanied by a favourable growth outlook, e.g. once the impact of an adverse oil price shock has dampened. Inflation expectations (both short- and long-term) in both the US and the euro area are currently much lower than during any episode preceding recessions.

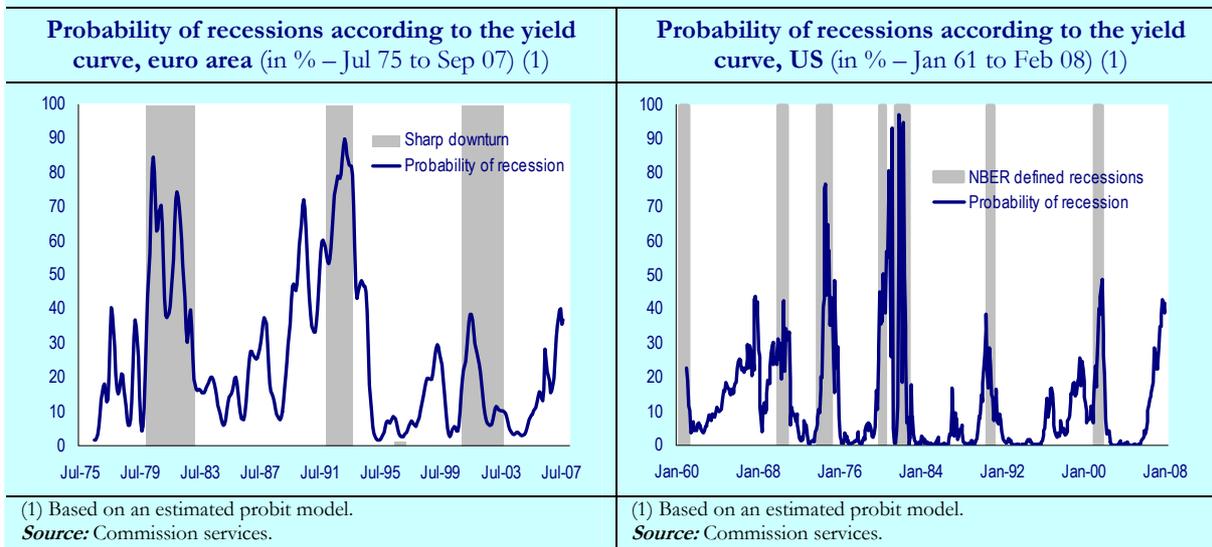
This leads to the second reason often cited for why the current yield curve flattening might not indicate a recession: central banks' increased credibility to maintain price stability. If financial markets believe that central banks will raise interest rates in the future and that this is likely to correspond with lower expected inflation, expected future nominal interest rates could stay the same. The argument of increased central bank credibility is also supported by the fact that inflation variability has dropped significantly since 1970.

Some argue that several factors related to the predictive power of the yield curve could affect its slope, including the gap between near- and long-term inflation expectations or near- and long-term risk premia. In fact, the key component from which the yield curve derives

¹³ See also the analysis in the Quarterly Report on the Euro Area, Volume 4 No. 4 (2005).

Box 2: Estimating the predictive power of the yield curve

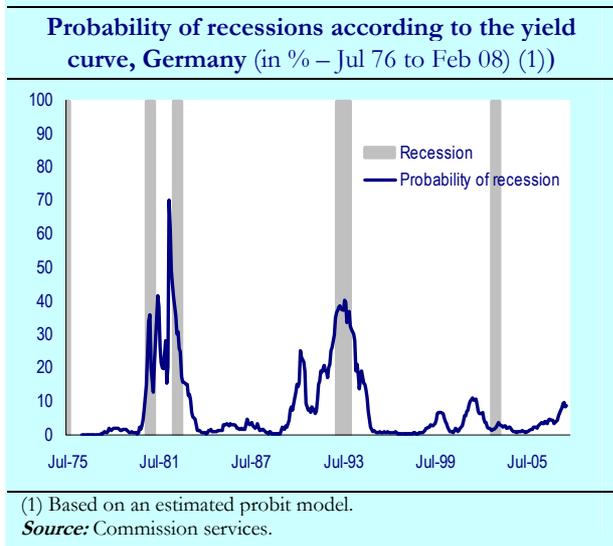
Although the strong relationship between inverted yield curves and recessions already emerges from a pure graphical analysis, it has also been tested empirically in several studies. Following the approach taken by Estrella* and Moneta**, we have estimated the probability of a recession in the US, Germany (as a proxy for the euro area), and in the euro area based on a standard probit model.



One important question, when assessing the predictive power of the yield curve, is what definition of recession to use. Official data on business cycle turning points exist for the US (published by NBER) but not for the euro area or individual euro-area countries. Another quite common approach is to define a recession as a period of two quarters of consecutive negative GDP growth. In the empirical analysis presented here, the NBER definition was applied for the US. For Germany, two quarters of consecutive negative GDP growth was used. For the euro area, a recession was defined as a period of sharp economic downturn, i.e. the period between a cyclical peak and trough as extracted from the euro-area GDP with a Baxter-King filter.

In the probit model used, the dependent variable was a dummy variable R where R=1 if the economy is in a recession and R=0 when it is not. In formal terms, the probability of a recession at time t, with a forecast horizon of k periods, is given by the following equation: $Pr(R_t = 1) = \phi(c_0 + c_1 X_{t-k})$,

where ϕ is the cumulative standard density function, and X is the set of explanatory variables used. In our estimates, X was defined as the standard yield curve (10-year interest rates minus 3-months interest rates). Monthly data was used and several lags were tested.



The best results were achieved by applying a lag of 12 months for both the US and Germany; and a lag of 7 months for the euro area. When interpreting the results, three issues should be noted. First, the GDP aggregate for the pre-EMU period masks national differences. The recession in the early 1990s, for example, hit Germany later than other Member States. Second, the yield curve for the euro area before 1999 is hypothetical and is strongly affected by the varying monetary policy regimes which applied in the different countries. The use of an artificial aggregate and a hypothetical yield curve could therefore blur the analysis. Third, the predictive power of the yield curve appears to be stronger in the 1970s and 1980s than in the 1990s.

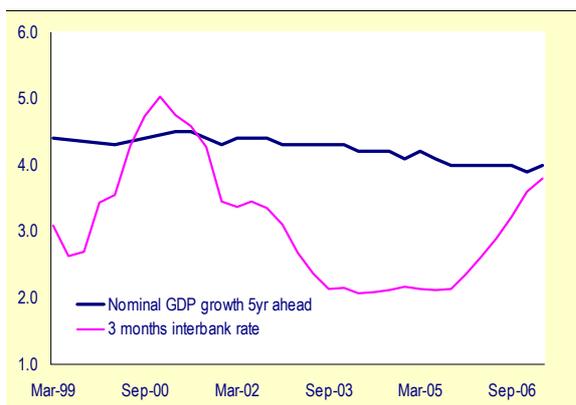
* Estrella, A. and M. Trubin (2006), 'The yield curve as a leading indicator: some practical issues', Current Issues in Economics and Finance, Federal Reserve Bank of New York, Vol. 12, No. 5.

** Moneta, F. (2003), *ibid.*



much of its predictive power for future GDP growth is the gap between the current and long-run levels of the (real) policy rate. That is, when the key policy rate is high relative to its long run level, the chance of a recession increases. In fact, since 1970 all inverted yield curves leading to or predicting a recession in the US were driven by policy rates above their 'neutral' or long-term level. At present, the policy rate in the US, even at 5.25 percent, is probably still below or around its 'neutral' level.¹⁴ Due to a lack of data for the euro area, earlier episodes of an inverted yield curve cannot be compared to the monetary stance at the time. However, the data available indicates that nominal short-term interest rates were above long-term expectations for nominal GDP growth in 2000, while they are currently still below.

Graph 16: Euro-area nominal GDP growth expectations⁽¹⁾ and short-term interest rate (in % – 1999Q1 to 2007Q1)



(1) Nominal GDP growth expectations are taken from the ECB Survey of Professional Forecasters.

Source: Ecowin.

Finally, the nature of the business cycles has changed. Up to the 1990s, typically, monetary policy was tightened because inflation went up. Consequently, an economic slowdown followed. In such a world, not surprisingly, an inverse yield curve would precede a recession. The latest business cycle since the bursting of the dotcom bubble has been characterised by low inflation.

Conclusion

The historical relationship between the yield curve and economic growth is broadly supported by academics and analysts. For the US in particular, an inversion of the yield curve has been a "safe bet" predictor of an upcoming recession. On this side of the Atlantic too, the yield curve has showed some predictive power in the case Germany and the euro area as a whole.

At the current juncture, however, the traditional relationship seems to be less straightforward. The inverted yield curve in the US and the almost flat yield curve in the euro area might not necessarily signal a recession. The main reasons for a possible structural break of the relationship are the exceptionally low level of bond yields, excess liquidity, the high credibility of monetary policy and the still low levels of policy interest rates compared to long-term or neutral levels. One might even wonder whether under the current circumstances a flat yield curve could even be stimulating economic growth in a period of tightening monetary policy?

¹⁴ The long-term growth rates of potential nominal GDP give an indication of where the neutral interest rate may be. For the US, the estimate of the Congressional Budgetary Office for potential nominal GDP growth is 5.8%.

3. The Lisbon Agenda for the euro area: the 2007 update of the Integrated Guidelines

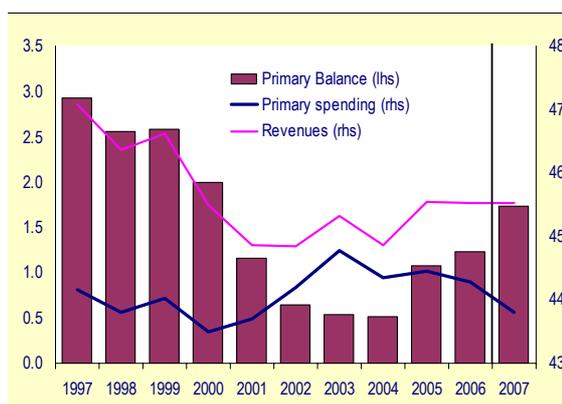
On 8/9 March 2007, the European Council endorsed the 2007 update of the Integrated Guidelines,¹⁵ which contain two sets of recommendations. The country-specific recommendations essentially require Member States to speed up the implementation of the structural reforms that they themselves have committed to undertake in their National Reform Programmes. The euro-area recommendations focus on those reforms that are especially relevant for the smooth functioning of monetary union, that is, on reforms that compensate for the loss of the independent use of interest or exchange rate policies. Adjustment and growth are linked: slow adjustment particularly harms countries that suffer from adverse shocks and eventually lowers the prospects of strong growth and high employment in the euro area as a whole.¹⁶

This section presents the rationale behind the four policy recommendations addressed to the euro area, namely: (1) increasing the room for manoeuvre for budgetary policy; (2) ensuring a composition of public spending and revenues more conducive to growth; (3) enhancing competition in and integration of product and financial markets; and (4) achieving a better alignment of wages and productivity, a better balance between employment protection and security in the labour market, and greater labour mobility.

Recommendation 1 – Make use of the favourable cyclical conditions to aim at or pursue ambitious budgetary consolidation towards their medium-term objectives in line with the Stability and Growth Pact, hence striving to achieve an annual structural adjustment of at least 0.5% of GDP as a benchmark

While the issue of fiscal sustainability is common to both euro-area and non-euro-area Member States, the fiscal policy stance of the euro area as a whole has the features of a public good and impacts on the single exchange rate and interest rate and hence on the macroeconomic policy-mix in the euro area. The absence of national monetary and exchange rate instruments in EMU makes fiscal discipline all the more important as a way of enhancing Member States' capacity to absorb asymmetric shocks. In other words, the ability to withstand adverse economic surprises, either through the full play of automatic stabilisers or potentially through discretionary action, depends on the room for manoeuvre created in good times. Fiscal discipline also facilitates the task of a single monetary policy in preserving price stability.

Graph 17: Cyclically-adjusted budgetary developments, euro area (% of GDP) (1)



(1) Excluding UMTS revenues. Primary spending and balance exclude interest expenditures. Autumn 2006 Forecast for 2007. **Source:** Commission services.

¹⁵ Since the re-launch of the Lisbon Strategy in 2005, the Integrated Guidelines combine the Broad Economic Policy Guidelines (Art. 99(2)) and the Employment Guidelines (Art. 128(4)).

¹⁶ For a detailed analysis of adjustment in the euro area, see the EU Economy 2006 Review http://ec.europa.eu/economy_finance/publications/the_eu_economy_review_en.htm.

The difficulties faced by several Member States in complying with the agreed 3% government deficit reference value during the past growth slowdown can be traced back to their fiscal behaviour in the early years of EMU. Budgetary consolidation was relaxed when growth



Box 3: EMU and the Lisbon Strategy: key dates and procedures

Cooperation and coordination of structural reforms in the European Union is covered by the Community's strategy to increase jobs and raise its growth potential, the Lisbon Strategy. Broadly speaking, achieving more jobs and growth is to be attained by reforms in product markets, budgetary institutions, financial and labour markets. The Lisbon Strategy is for the whole Community, not just the euro area, but members of the euro area have an added incentive to undertake integrated structural reforms - such reforms will strengthen their capacity to adjust to economic shocks in a monetary union. Therefore, in its Annual Progress Report on the state of implementation of the Lisbon Strategy, the Commission has included a fiche dedicated to the euro-area, which focuses on reforms that are especially relevant for the smooth functioning of monetary union.

Autumn 2005	Each Member State produced a three-year strategic plan, its National Reform Programme (NRP) , which defined the main national challenges to be overcome to achieve the Lisbon objectives, as well as the policies designed to address those challenges.
January 2006	The Commission assessed the NRPs with a view to identifying whether the challenges addressed by the Member States match the individual reform needs. The assessment included a fiche for the whole of the euro area that summarised the economic challenges and reform commitments identified by the euro-area Member States.
Autumn 2006	The NRP was followed by Member States' Implementation Reports (IR) that showed where progress had been made to meet Member States' own reform strategies. The Commission submitted a Community Lisbon programme that reported on progress with policy measures at the Community level.
December 2006	In its 2006 assessments of the IRs, the Commission highlighted what it considers to be the strengths and weaknesses of reform in each Member State. A separate assessment was produced for the euro area, the so-called euro-area fiche, comparing the progress with reforms in the NRPs with the area-specific reform needs. The concluding section of the Commission's assessment included specific policy recommendations that cover those areas where weaknesses need to be tackled with the highest priority. These conclusions and recommendations were addressed to each Member State and to the euro area .
Winter 2006/2007	The concluding sections of the Commission's assessment were discussed by the Council in view of adopting a Council Recommendation on the 2007 Broad Economic Policy Guidelines (Art. 99(2)) and the Employment Guidelines (Art 128(4)) addressed to each Member State and, in the case of the euro-area fiche, all the euro-area Member States. They were endorsed by the European Council on 8/9 March 2007.

Note: The Commission's assessments are in the public domain, having been published as its Annual Progress Report (APR), http://ec.europa.eu/growthandjobs/annual-report-1206_en.htm.

conditions became favourable. In cyclically-adjusted terms, primary public expenditures declined by a mere ½ pp of GDP between 1997 and 2000 while revenues (excluding UMTS revenues) diminished by 1.5% of GDP. This caused the primary balance to deteriorate by about 1% of GDP during a strong cyclical upswing (Graph 17).

In 2006, nine of the current 13 Member States recorded a structural deficit in excess of their medium-term objective and the structural deficit is forecast to remain above the medium-term objective until 2008 in almost all of them. Despite favourable cyclical conditions, a structural improvement of more than 0.5 pp of GDP is predicted to occur in only three Member States in 2007 (DE, IT, LU) and in one Member State in 2008 (FR).

Table 4: **Structural government balances and medium-term objectives** (in % of GDP) (1)

Country	MTO	Structural balances		
		2006	2007	2008
DE	0	-2.0	-1.5	-1.5
IE	0	2.9	1.8	1.8
EL	0	-3.4	-2.8	-2.3
ES	0	1.8	1.5	1.6
FR	0	-2.5	-2.2	-1.6
IT	0	-3.9	-2.5	-1.9
LU	-0.8	-1.3	-0.5	-0.1
NL	-0.75	0.4	-0.1	0.0
PT	-0.5	-3.4	-2.6	-1.8
FI	2.0	2.9	2.7	2.7

(1) Data not available yet for BE and AT.

Source: Commission services calculations on the basis of the 2006-07 updates of the National Stability Programmes.

Fiscal consolidation is not only crucial to generate room for manoeuvre to withstand negative cyclical shocks but also in view of the challenges posed by ageing. Ageing populations and high levels of public debt may jeopardise fiscal sustainability in several Member States. A number of Member States undertook reforms to their pension and health system in the past years or announced further measures in their National Reform Programmes, with the objective of reducing the budgetary costs of ageing populations. Analysis in the Commission's sustainability report suggests that future public debts would be considerably reduced if Member States accomplished the medium-term budgetary objectives by 2010.¹⁷

Recommendation 2 – Improve the quality of public finance by reviewing public expenditures and taxation, with the intention to enhance productivity and innovation, thereby contributing to economic growth and fiscal sustainability

The structure of public expenditure and the design of the tax system can have a significant impact on growth potential. For example, taxation may distort economic decisions on labour market participation, savings, investment and risk-taking, with crucial effects on hours worked and labour productivity.¹⁸

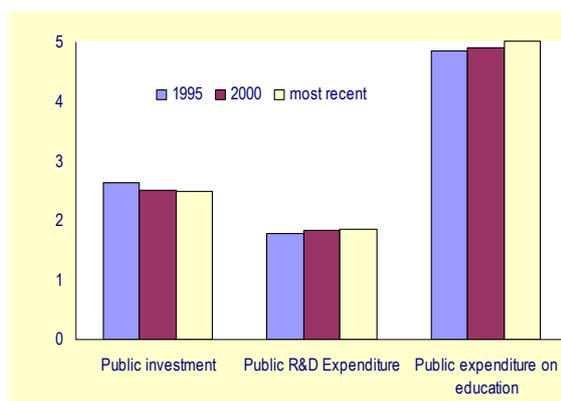
Over the last years, Member States have carried out important reforms of their tax systems, with the objectives of creating a more employment-friendly labour taxation, and of rationalising and simplifying the tax system. Reforms have also aimed at responding to the challenges emerging from ageing populations, which are likely to reduce the labour tax base and at the same time

¹⁷ See also Quarterly Report on the Euro Area, Vol. 5 No. 4 (2006), pp. 38-48.

¹⁸ Some economists argue that both low productivity growth and low labour utilisation in terms of hours worked in Europe are essentially due to the impact of taxation. See for example, Prescott, E. (2004), 'Why Do Americans Work So Much More Than Europeans?' Federal Reserve Bank of Minneapolis Quarterly Review, vol. 28, no. 1, pp. 2-13, or Gordon, R.J. and I. Dew-Becker (2006), 'The Slowdown in European Productivity Growth: A Tale of Tigers, Tortoises, and Textbook Labor Economics', http://faculty-web.at.northwestern.edu/economics/gordon/nber_SI_p_ercapita_060803.pdf.

increase the demand for social spending as well as from globalisation, which may render it increasingly difficult to collect taxes from mobile tax bases.

Graph 18: Public spending on growth-enhancing items, euro area (1) (in % of GDP)



(1) Most recent observation is 2006 for public investment, 2004 for R&D and 2003 estimate for education.

Source: World Economic Forum, Commission services.

However, there remains considerable scope for efficiency improvements for tax systems and public spending. Regarding the latter, it is important to re-direct public expenditure from public consumption towards the more 'productive items' which may boost economic growth and particularly towards R&D and education which have emerged as important determinants of productivity growth.¹⁹ Beyond this composition effect, it is also critical to raise the value for money of public spending in each spending category. There is indeed substantial evidence of a lack of efficiency in spending in some countries and the relation between the amount of public spending and the actual performance is frequently weak. This is, for instance, illustrated by the fact that countries which spend more on their public education systems do not necessarily have public schools of higher quality (Graph 19).

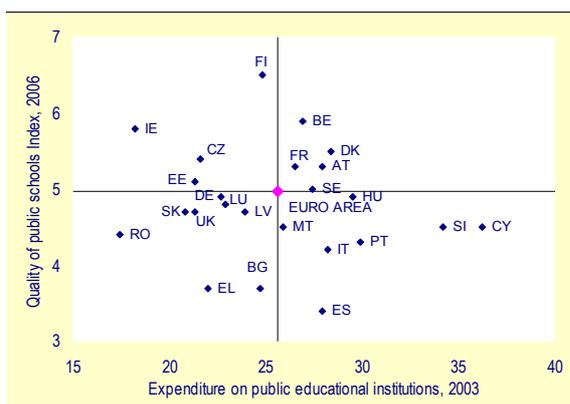
A number of countries have undertaken or announced measures in their National Reform Programmes to improve the efficiency of public administration and establish control institutions, including through policies for better regulation,

¹⁹ For a comprehensive review of the quality of public finances, see European Commission, 'Public finances in EMU 2004', European Economy No 3/2004.



i.e. reducing the administrative burden and ensuring a more widespread use of impact assessments when new legislation is introduced.²⁰

Graph 19: Efficiency of public spending in education (1)



(1) The quality index stems from the World Economic Forum It ranges from 1 (poor quality) to 7 (best in the world). Annual expenditure on public educational institutions per pupil/student compared to GDP per capita, for all levels of education combined, based on 2003 full-time equivalents.

Source: World Economic Forum, Commission services.

Recommendation 3 – Effectively implement measures that improve competition, especially in services, ...

There is evidence that weak competition in the services economy has contributed to low economic growth, a lack of resilience to economic shocks and protracted adjustment to growth and inflation differences in the euro area:

- The increased productivity gap with the US is largely driven by productivity advances in the US due to its greater use of ICT in services.²¹ A low degree of competition affects productivity because it reduces the pressure on service suppliers to implement innovative new technologies, improve work organisation and introduce new products. Moreover, imperfections in the services sector tend to affect the rest of the economy

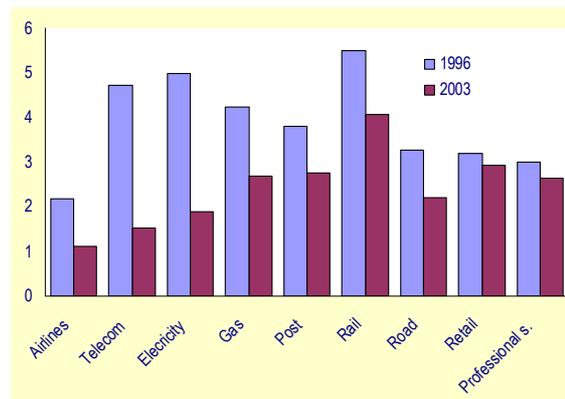
²⁰ Since this issue applies to all countries and not only to the euro area, it was not included in the original Commission's list of recommendations, but added later at the request of the euro-area Member States.

²¹ See the focus section on services in QREA Vol. 5, No 2 (2006), pp 25-36.

as services are an important intermediate input into many industries.

- Enhanced competition in services could help foster price flexibility. Service inflation persistently runs at a relatively high rate and downward price rigidity is markedly higher in services than in the rest of the economy, which contributed to the slow decline in inflation in the 2000-03 growth slowdown.²²
- A further justification for treating competition in the service economy as a special concern of the euro area relates to its potentially important impact on the capacity to shift resources between tradables (industry) and non-tradables (services), which has been identified a major adjustment channel for current account imbalances.²³

Graph 20: Deregulation in service industries, euro area (1) (OECD regulation index 0 to 6)



(1) GDP-weighted average of national indices. Excluding Luxembourg and, for professional services, Greece. The retail services figure is for 1998, not 1996.

Source: OECD, Commission services.

Competition in many services tends to be less intense than in manufacturing due to their

²² Research by the ECB's Inflation Persistence Network found a frequency of price changes in services lower than in both the rest of the economy and the US services sector See Altissimo, P. et al. (2006), 'Inflation persistence and price setting in the euro area – A summary of the IPN evidence', ECB Occasional Paper No. 46.

²³ See Obstfeld, M. and K.S. Rogoff (2005), 'Global current account imbalances and exchange rate adjustments', Brookings Paper on Economic Activity 1/2005, pp. 67-123.

intrinsically lower degree of tradability, but also because of domestic regulation of entry, operational restrictions and price controls. However, technical progress in information and communication technologies has increased the tradability of communication and business services. Moreover, the adoption of the Directive on Services is a welcome step towards a Single Market for services. It must be transposed into national law before December 2009. Progress in deregulating network industries, the retail sector and professional services has also been made over the past decade (Graph 20).

There is some first evidence that market opening and the deregulation of services has started to pay off. For example, some recent studies have found benefits in terms of employment, productivity and lower prices from both market opening to foreign competitors²⁴ and deregulation.²⁵

Recommendation 3 (cont.) – ...and step up measures that promote the full integration of financial markets and competition in retail financial services

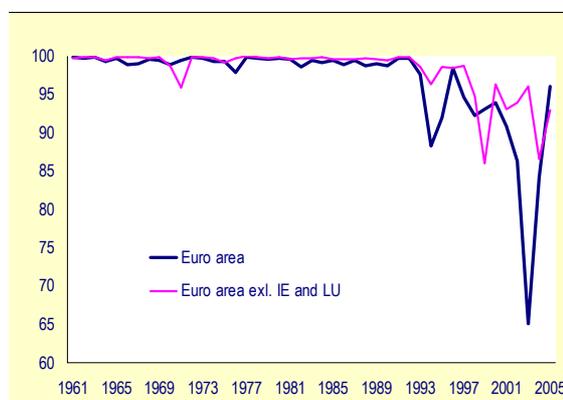
The special emphasis on financial services underscores their importance for overall economic activity. Furthermore, there is a clear euro-area dimension because the introduction of the euro implies a big leap towards an integrated financial market. Integrated financial markets also have an important role for economic adjustment. An efficient financial market facilitates the re-allocation of resources across sectors and firms, which strengthens resilience to economic shocks. The cross-border diversification of portfolios helps smooth income shocks and therefore lower exposure to risks.

²⁴ Studies on the economic impact of the Services Directive are available at http://ec.europa.eu/internal_market/services/services-dir/studies_en.htm.

²⁵ See for example, ECB (2006), 'Competition, productivity and prices in the euro area services sector', Occasional Paper No. 44, Faini, R. (2006), 'Contrasting Europe's decline: do product market reforms help?', in Boeri et al. (eds.), *Structural reform without prejudices*, Oxford University Press.

To some extent, financial integration has already increased the cross-border diversification of risks within the euro area. This is indicated in Graph 21 by a declining correlation between GDP and GNP growth across countries. They are indicative of some decoupling between domestic production (GDP) and domestic income (GNP), which is caused by the increasing importance of income flows from capital and to some extent labour income from abroad (i.e. the difference between GDP and GNP).

Graph 21: Cross-country correlation between GDP and GNP growth across 12 euro-area Member States (in %)



Source: Commission services.

Though many financial market segments, especially government bond markets and large cap stocks, are already highly integrated, there is still evidence of fragmentation in the retail sector. In this regard, euro-area Member States should have a special interest in addressing the remaining obstacles to the full integration of financial markets.

It also appears important to intensify the monitoring of competition in the retail financial sector. A recent sector inquiry by the Commission on retail banking found large variations in interest rates charged and offered, in prices for payment services and in the profitability of service providers across the Member States. Differences across countries in legal, regulatory and tax systems and language may explain part of the fragmentation of retail banking markets along national lines. However, the inquiry identified various barriers to entry that may prevent foreign banks and payment card providers from penetrating new markets



such as discriminatory rules that impede access to financial infrastructure (payment card networks, clearing and settlement, credit registers), product tying practices and high costs of changing banks in some Member States.

Recommendation 4 – Improve flexibility and security on labour markets, ...

Labour market developments have been the positive surprise of recent years. Job creation has been much higher and the increase in unemployment much lower during the latest downturn than could have been expected on the basis of past slowdowns. Despite the improvement in labour market performance, a number of indicators such as wage developments, labour market institutions and information about the mobility of labour suggest that the adjustment of employment to shocks in the euro area remains slow.

Recommendation 4 (cont.) – ...inter alia by better aligning wage and productivity developments, ...

Now that the disappearance of national monetary and exchange rate policies put the adjustment burden on market forces, a higher degree of wage flexibility in the euro area is warranted. This would also have a favourable effect in reducing price stickiness, most importantly in labour-intensive services. It would also allow euro-area Member States to adjust faster to competitiveness pressures, since low wage flexibility has been identified as a reason behind the slow adjustment of growth differences across countries via the competitiveness channel.²⁶

Table 5 suggests that the responsiveness of wage growth differences to cyclical differences differs across euro-area countries and is asymmetric with regard to the stage of the cycle considered, i.e. wage growth accelerates more strongly when the output gap is positive than it decelerates when the output gap is negative. If GDP is running above potential (estimate I), the responsiveness of wages to the output gap is highest for Italy, the Netherlands, Spain and Germany and lowest for Austria, France and

Greece. In recessions (estimate II), the elasticity has been generally lower than in booms and significant in only a handful of countries (Germany, Spain, Ireland, Finland and Portugal), meaning that wages are relatively unresponsive to cyclical conditions in several Member States.²⁷

Table 5: Elasticity of relative wage growth with respect to the business cycle differences (1)

	I. Output gap > 0 Elasticity	II. Output gap < 0 Elasticity
BE	0.88 (***)	-0.17
DE	1.15 (***)	1.38 (***)
IE	0.77 (***)	0.71 (***)
EL	0.28	-0.72
ES	1.21 (***)	1.02 (***)
FR	0.08	-0.01
IT	1.98 (***)	-0.13
NL	1.37 (***)	-0.09
AT	-0.3	0.21
PT	1.03 (***)	-0.68 (*)
FI	0.85 (***)	0.59 (***)

(1) All values were expressed relative to the weighted average of remaining euro area countries using bilateral trade weights. Output gap lagged by 1 year. Significance levels: *** for 1%, ** for 5%, * for 10%. For more details, see EU Economy 2006 Review, Chapter IV, Table 6.
Source: Commission services.

The differentiation of wages across regions, sectors and occupations is equally relevant for both adjustment capacity and job creation. While there is little data on wage differentiation on a comparable cross-country basis, the continuously high rates of long-term unemployment and the persistence of regional differences in employment performance suggest that there is scope for a better alignment of wage and productivity developments in some Member States.

Recommendation 4 (cont.) – ...balancing employment protection and security in the market ...

Better job allocation will require more responsive labour demand and supply and accompanying policies to give mobile workers more employment security. More investment in human capital, more efficient public employment services and active labour market

²⁷ Using a different angle, research from the International Wage Flexibility Project found that real wages in almost all euro-area Member States have more downward rigidity than in the US. Information on the international Wage Flexibility Project is available at <http://brookings.edu/es/research/projects/iwfp.htm>.

²⁶ See EU Economy 2006 Review.

policies, a rebalancing of employment protection and measures to foster a more flexible work organisation could be instrumental in this regard. The security aspect implies a major emphasis on activation policies, whereby the unemployed receive unemployment benefits but at the same time are encouraged to re-enter the labour force by means of re-integration measures. As regards flexibility, the liberalisation of employment protection legislation (EPL) has been the most controversial issue. Estimates suggest that countries with tighter EPL have more pro-cyclical unit labour costs but more stable employment over the cycle.²⁸

Table 6: Development of the Employment Protection Legislation index (1)

	Regular workers			Temporary workers		
	Late 1990	2003	2006	Late 1990	2003	2006
BE	1.7	1.7	1.7	2.6	2.6	2.6
DE	2.7	2.7	2.7	2.3	1.8	1.8
IE	1.6	1.6	1.6	0.3	0.6	0.6
EL	2.3	2.4	2.4	4.8	3.3	3.2
ES	2.6	2.6	2.7	3.3	3.5	3.4
FR	2.3	2.5	2.5	3.6	3.6	3.3
IT	1.8	1.8	1.8	3.6	2.1	2.1
NL	3.1	3.1	2.9	1.2	1.2	1.2
AT	2.9	2.4	2.4	1.5	1.5	1.5
PT	4.3	4.3	4.3	3	2.8	2.8
FI	2.3	2.2	2.2	1.9	1.9	1.9
Euro area	2.4	2.4	2.4	2.9	2.5	2.4
USA	0.2	0.2	NA	0.3	0.3	NA

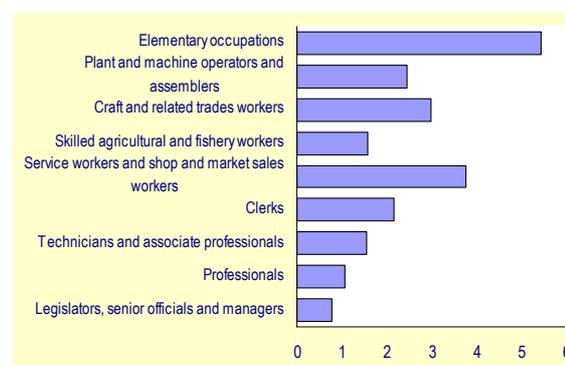
(1) The tighter EPL, the higher the index. 2006 is a tentative ECFIN estimate based on LABREF (the database on labour market reforms prepared by DG ECFIN and the EPC). Euro area is a GDP-weighted average of available Member States.

Source: OECD, Commission services.

Over the last few years, several euro-area Member States have reformed their EPL, but as the OECD indicator suggests, these reforms have (i) been small, (ii) started from a high level of EPL compared to the US and (iii) largely focused on temporary workers (Table 6). Policy targeted at 'increasing flexibility at the margin', for instance increasing the share of fixed-term or temporary contracts relative to the standard open-ended employment contracts, has had some detrimental segmentation effects on the labour market. While helping improve the employment outlook of temporary workers, these reforms have worsened the prospects for

temporary workers to eventually move into regular labour contracts.

Graph 22: Rates of unemployment per occupation, euro area 2006Q2 (1)



(1) Previous occupation of unemployed in % of employed and unemployed in the same occupation.

Source: Commission services.

Recommendation 4 (cont.) – ...and enacting measures to promote labour mobility across borders and between occupations

It is well known that labour mobility is low in the euro area. This of course applies to mobility across borders, which is understandable because language differences function as a natural barrier, despite some policy progress in addressing obstacles, for example by increasing the recognition of professional experience or improving the portability of social benefits. But it also holds for mobility across regions and occupations.

- In the EU-15, it is estimated that in any given year 0.1% of the active working-age population change their country of residence.²⁹
- Every year between 2000 and 2005, about 1% of the working-age population moved residence across regions (NUTS 1), compared to around 3% in the USA.
- A recent Eurobarometer survey showed that one third of all employees had worked for

²⁸ See EU Economy 2006 Review, Chapter IV for the estimates.

²⁹ For a review of geographic mobility, see European Commission (2006), "Employment in Europe 2006", Chapter 5.



the same employer more than 10 years, and 18% for more than 20 years.

For the US, it has been shown that inter-state migration plays a key role in adjustment to regional shocks.³⁰ Since labour mobility is much lower in the euro area than in the US, migration contributes much less to adjustment, which therefore occurs largely through changes in unemployment and participation. Increasing the mobility of labour would therefore reduce the impact of regional developments on local unemployment and reduce the share of discouraged workers in the labour force, thereby facilitating regional adjustment.

Low job flows increase the risk of labour-market mismatches. The effect of little job mobility is evident in striking differences in rates of unemployment across occupations. A number of policies may impact on occupational mismatch, including more efficient public employment services, training and active labour market policies, more flexible wages and increased wage differentiation.

Conclusion

While the euro-area Member States' National Reform Programmes address many of the reform areas needed to raise growth and employment, it has become apparent that those structural reforms that are particularly relevant for improving the smooth functioning of the euro area have not featured prominently in them.

Therefore, the euro-area fiche of the Integrated Guidelines formulates four recommendations aimed at ensuring a more efficient internal adjustment mechanism in EMU. The euro-area Member States are expected to take these recommendations into account in their national policies together with the recommendations specific to their country. They are therefore expected to be reflected in their future National Reform Programmes and their implementation to be discussed in depth.

³⁰ Blanchard, O. and L. Katz (1992), "Regional evolutions", Brookings Papers on Economic Activity, No. 1, pp. 1-75.

Focus

II. The contribution of labour cost developments to price stability and competitiveness adjustment in the euro area

This focus assesses the extent to which wage and labour cost developments have facilitated and can be expected to facilitate two policy objectives within the euro area, namely aggregate price stability and sustainable competitive positions at individual country level. Evidence shows that brightening economic conditions have not translated into accelerating wage growth so far; meaning that unit labour cost developments have remained consistent with price stability and employment-friendly growth.

However, this aggregate picture of subdued labour cost pressures conceals sizeable differences across euro-area countries. Much of the overall benign wage developments in recent years is due to significant wage moderation in Germany where nominal unit labour costs had stagnated over the period 2002 to 2006, while in a non-negligible number of euro-area countries nominal unit labour costs had grown more rapidly. As a result, persistent differentials in price competitiveness and concomitant widening current account imbalances have built up since the inception of the monetary union. Thus, over and above wage moderation, there is a need for relative competitive positions to be rebalanced. The challenge here is to further enhance wage flexibility at country level and thus speed up competitiveness adjustment through smooth, employment-friendly dynamic processes. Rebalancing competitive positions among euro-area countries will necessarily mean that those countries which need to regain intra-area competitiveness have to keep unit labour cost growth below the euro area average. Achieving such an outcome will be a major challenge.

Over the short-term, increasing signs of tightening labour market conditions and the aforementioned sizeable differences across euro-area countries present potential upside risks. Should wages in Germany return to more standard patterns, then unchanged wage and price-setting behaviour in other countries would clearly entail pressures for the euro area as a whole, jeopardizing price stability. Looking further ahead over a longer time span, measures to increase labour supply availability and heightened competition in product and labour markets brought about by structural reforms and globalization should help to keep a lid on excessive wage claims. Moreover, some rebound in trend productivity growth, following recent structural reforms in the euro area, should help to moderate unit labour cost growth while preventing the whole burden of adjustment from falling on wages.

1. Introduction

Euro-area Member States share a single monetary policy directed towards price stability. In EMU, it has become even more important than in the past for wage developments in each country to be in line with the macroeconomic requirements, both at euro-area and at individual-country level.

At the aggregate euro-area level, nominal wage developments should not jeopardize price stability. Wage moderation helps to reduce inflationary pressures, thereby creating room for a more accommodative monetary stance. This aggregate requirement translates into the condition that nominal wage increases should not exceed the sum of trend productivity and the price stability target of the ECB of close to but below 2%.

At individual-country level, wage flexibility plays a pivotal role in facilitating the adjustment of divergent

external positions among euro-area members. Persistent inflationary wage pressures in one Member State will sooner or later, via its effect on relative unit labour costs, depress competitiveness and employment in that country. Although part of the necessary intra-euro-area adjustment process, especially in the event of asymmetric cyclical positions, a protracted structural loss of relative competitiveness needs to be avoided as its reversal could prove costly in terms of losses of output and employment. Short of national monetary policies, the current challenge is to further enhance wage flexibility at country level so as to speed up competitiveness adjustment through smooth, employment-friendly dynamic processes.³¹ Rebalancing competitive positions

³¹ For a detailed analysis of the role played by wage-setting behaviour in the adjustment process in the euro area, see European Commission (2006), "The EU Economy 2006 Review: Adjustment Dynamics in the Euro Area", European Economy, No 6.



within the monetary union requires that those countries which need to regain intra-area competitiveness keep unit labour cost growth below the euro-area average.

This focus assesses to what extent wage and labour cost developments have facilitated and can be expected to facilitate the aforementioned policy objectives, i.e. price stability at euro-area level and sustainable competitive positions at individual-country level. To this end, Section 2 reviews the latest wage and labour cost developments while Section 3 discusses short to medium-term wage and labour cost prospects together with certain policy considerations as to the functioning of labour markets both at the current juncture and the medium to long run. Section 4 draws a number of concluding remarks.

2. Recent labour cost developments and prospects

Inflationary pressures stemming from the labour market remain subdued

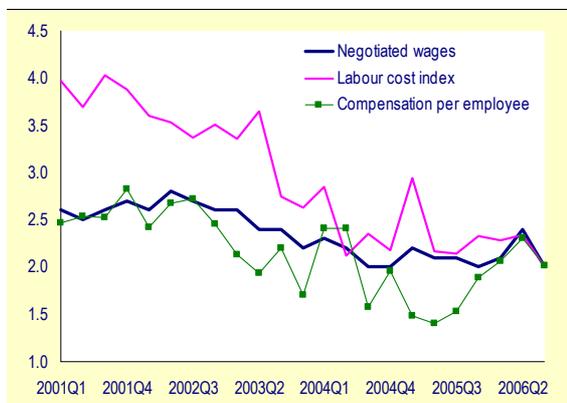
Brightening economic conditions have not translated into accelerating wage growth so far. Notwithstanding a period of brisk growth in the euro area and gradually declining unemployment, wage moderation has continued to prevail. The latest information conveyed by the various indicators of labour costs does not seem to point to any significant emergence of permanent upward wage pressures in 2006.

All harmonized nominal wage indicators show that the moderate wage pressures recorded in 2005 also prevailed in 2006. Looking at the latest information (Graph 23 and Table 6), the various labour cost indicators point to continued moderation in wage growth in the third quarter of 2006. The acceleration in compensation per employee (CPE) registered in the second quarter did not persist in 2006Q3 as the annual rate of change declined from 2.4% in the second quarter to 2.2% in the third quarter. Also, the growth rate of total hourly labour costs as measured by the Eurostat Labour Cost Index (LCI) fell to

2.0% in the third quarter, from 2.3% in the previous three quarters.

Annual growth in nominal unit labour costs remained stable at about 0.9-1% in 2006. This stems from the combination of moderate growth in compensation per employee and an increase in labour productivity growth. The increasing use of opt-out clauses and flexible contractual formulae may have contributed to keeping labour costs on the moderate growth path observed since the launch of the euro.

Graph 23: Quarterly nominal wage growth, euro area
(y-o-y changes in % – 2001Q1 to 2006Q3)



Source: Commission services.

Over a longer time span, Table 7 shows that during the period 1999-2005 nominal wage developments in the euro area-12 have been consistent with the goal of price stability, i.e., nominal unit labour cost growth has been lower than the 2% price-stability target of the ECB, thus indicating negative real unit labour cost growth of -0.4%.

Moderate wage increases are also reflected in Graph 24 where the GDP deflator, which measures the 'price' of total value added per unit of output, is decomposed into its various components of income, i.e. unit labour costs, gross operating surplus and net indirect taxes per unit of output. A look at Graph 24 suggests, first of all, that the domestic price pressures reflected in the annual rate of change of the GDP deflator have been more contained in recent years,

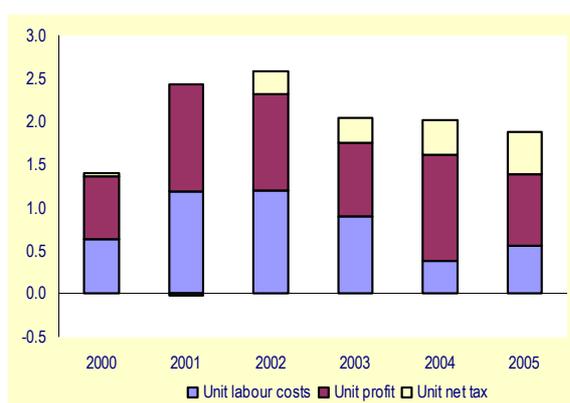
Table 7: Recent labour cost indicators in the euro area (1) (year-on-year growth rates in %)

	2003	2004	2005	2005Q3	2005Q4	2006Q1	2006Q2	2006Q3
Negotiated wages	2,4	2,1	2,1	2,1	2,0	2,1	2,4	2,0
Total hourly labour costs	3,1	2,3	2,3	2,1	2,3	2,3	2,3	2,0
Compensation per employee	2,0	2,1	1,6	1,5	1,9	2,1	2,4	2,2
Memo items:								
Labour productivity	0,3	1,0	0,7	0,9	1,0	1,2	1,4	1,2
Unit labour costs	1,7	1,1	0,9	0,6	0,9	0,9	1,0	1,0

(1) Excluding Slovenia.
 Source: Commission services.

standing at around 2% since 2004 after having been as high as 3% in late 2001. The second point that this income decomposition unveils is that the contribution of unit labour costs to the growth in the GDP deflator decreased significantly from 2002 onwards, finishing at about half a percentage point in 2005. Conversely, the contribution of net indirect taxes has increased over time, while that of profits has remained broadly constant. Thus, on average, producers have been able to maintain profit margins despite strong non-labour input cost pressures and heightened international competition.

Graph 24: Income decomposition of GDP deflator, euro area (% contribution to y-o-y changes of GDP deflator)

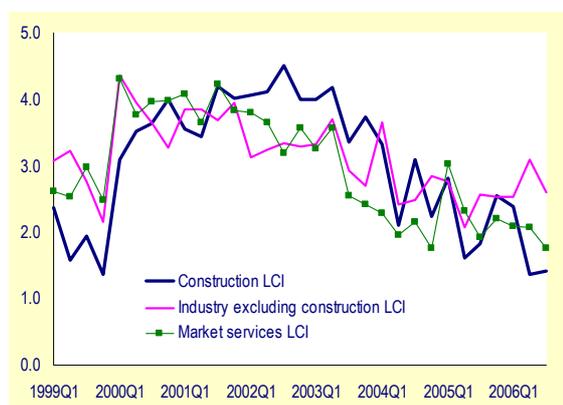


Source: Commission services.

Looking at sectoral wage developments, the latest available data (Graph 25) reflect a general decline in the rate of growth, the sharpest fall being recorded in the industrial sector, although it still remains significantly above the growth rates registered in construction and market services. From a long-term perspective, the

average growth rate of total hourly labour costs over the period 1999Q1-2006Q3 amounted to 3.1% in industrial sectors, and 3.0% in both construction and services sectors. The fact that labour costs increased by a similar amount over the period 1999-2005 in both manufacturing and services confirms that the persistently high inflation differentials between services and goods are due to differing sectoral labour productivity developments³² and that wage growth in services appears to be much less aligned with productivity than wage growth in manufacturing, thus creating upward pressures on services prices in the euro area.

Graph 25: Sectoral labour cost developments, euro area (changes y-o-y in % – 1999Q1 to 2006Q3)



Source: Commission services.

³² This analysis is in line with the so-called 'Scandinavian model of inflation', according to which prices in the sector exposed to external competition (i.e. the manufacturing sector) will generally align with external prices. With an integrated labour market, wage developments will be similar in both the exposed sector and the sheltered sector (i.e. the services sector) and will be determined by developments in external prices and in productivity in the exposed sector. If productivity is slower in the sheltered sector, prices in that sector will grow faster than in the exposed sector.



Productivity growth in industry averaged 2.3% and only 0.2% in services during the period 1999-2005. The comparatively weak performance in services can be explained in part by constraining regulations, less scope for technological change and less exposure to international competition.

However, this picture of subdued labour costs pressures conceals sizeable country differences

At country level, sizeable differences across euro-area countries in nominal compensation per employee and unit labour costs growth have built up since the inception of EMU. The historically low average growth rate of 2.6% in nominal compensation per employee in the euro area over the period 1999-2005 needs to be seen in conjunction with the very low growth recorded in Germany, reflecting, inter alia, the impact of reductions in social security contributions on labour costs. Excluding Germany from the euro-area aggregate would yield an average growth rate of 3% over the same time horizon. Similarly, nominal unit labour costs increased at an annual rate of 1.5% for the euro-area, as against 2.2% when Germany is excluded from the aggregate (Graph 26).

Looking in more detail at country-specific developments (Table 8), it is easy to see that wage growth differentials are relatively high. Both Germany and Austria have experienced moderate wage pressures, with average growth rates of compensation per employee of 2.0% over the period 1999-2005. By contrast, the highest wage growth has been recorded in Greece (6.4%) and Ireland (6.0%). The remaining countries are in the range of 2.6% to 4.3%. Moreover, wage growth differentials across countries appear to have been only loosely related to relative productivity growth differentials, which are low across euro-area countries. Consequently, persistent wage growth differentials are also reflected in fairly divergent growth rates of unit labour costs. Average growth of nominal labour costs in the euro area over the period 1999-2005 amounted to 1.5%. Again, such moderate aggregate behaviour was mainly driven by Germany (0.4%) and, to a lesser extent, Austria (0.5%). At the other end of

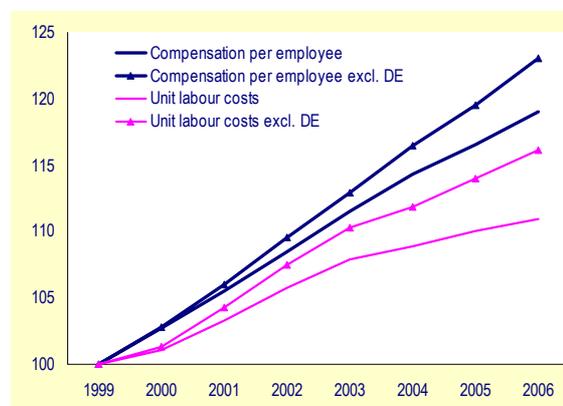
the spectrum, pronounced increases in nominal labour costs were recorded in Portugal (3.5%), Ireland and Luxembourg (2.9% each), Greece (2.8%) and Spain, Italy and the Netherlands (around 2.6% each), with varying patterns in terms of composition. Substantial increases in compensation per employee - Ireland, Greece and the Netherlands -, weak productivity gains - Spain and Italy - or a combination of the two - Portugal and Luxembourg - governed the behaviour of nominal unit labour costs.

Table 8: Labour cost developments, euro area
(average percentage change 1999-2005)

% change year-on-year	Comp. per employee	Labour productivity	Nominal unit labour costs
BE	2,7	1,2	1,5
DE	2,0	1,6	0,4
EL	6,4	3,5	2,8
ES	3,0	0,4	2,6
FI	3,2	1,8	1,4
FR	2,6	0,9	1,7
IE	6,0	3,1	2,9
IT	3,0	0,4	2,6
LU	3,7	0,8	2,9
NL	4,2	1,7	2,5
AT	1,9	1,4	0,5
PT	4,3	0,8	3,5
EA 12	2,6	1,0	1,5

Source: Commission services.

Graph 26: Compensation per employee and nominal unit labour costs, euro area with and without Germany
(Index 1999=100)

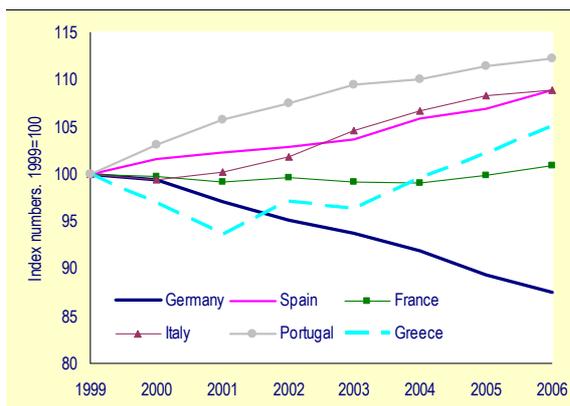


Source: Commission services.

Divergent unit labour cost developments across countries have contributed to widening current account differences within the euro area

The widening dispersion of current account positions within the euro area may not be a matter of concern to the extent that they reflect asymmetric cyclical positions of national economies or a financial deepening process fostered by the euro and European financial market integration.³³ However, widening current account positions also reflect certain imbalances within euro-area countries which are attributable to a series of non-benign factors. One such factor is the difficulty encountered by some countries in aligning wage behaviour with productivity developments, which arises from insufficient nominal and real flexibility in labour markets. This is particularly so in a selected number of countries, namely Portugal, Italy, Greece and Spain. Graph 27 shows to what extent relatively slow wage responses to growth, inflation and current account differentials within the euro area have resulted in prolonged under/over-shooting dynamics in intra-euro-area real effective exchange rates, which are in turn accompanied by protracted adjustment periods.

Graph 27: Intra-euro-area real effective exchange rates based on unit labour costs, selected countries (Index 1999=100)

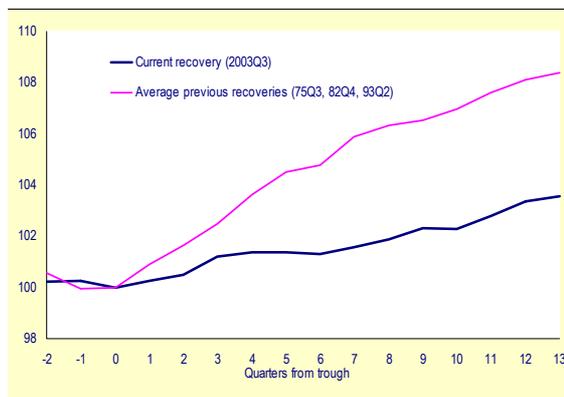


Source: Commission services.

A number of factors lie behind wage moderation

Moderate increases in wages in the euro area over the past few years can be explained by a set of factors, most prominent among them sluggish productivity growth, less prevalent use of automatic wage indexation coupled with enhanced credibility of monetary policy, the impact of globalization, structural changes in the euro-area labour market and last, but not least, country-specific factors applying to Germany over recent years.³⁴ Particular emphasis is given here to weak labour productivity growth. To illustrate the point, a cyclical comparison has been made (Graph 28) of labour productivity developments in the current recovery (namely when GDP bottomed out in 2003Q2) with the average of the past three major recoveries (starting respectively in 1975Q3, 1982Q4 and 1993Q2). Labour productivity, which typically displays a pro-cyclical pattern, has expanded by 1.1% (quarter-on-quarter annualized) in the euro area in the current recovery, which compares poorly with the average pace of 2.5% in previous recoveries

Graph 28: Labour productivity across cycles, euro area (Index=100 at trough)



Source: Commission services.

It is also interesting to compare developments in the current recovery with the average of the past three recoveries. This comparison shows that the pace of expansion in real wages in the euro area during the current recovery is substantially lower than that observed in past recoveries.

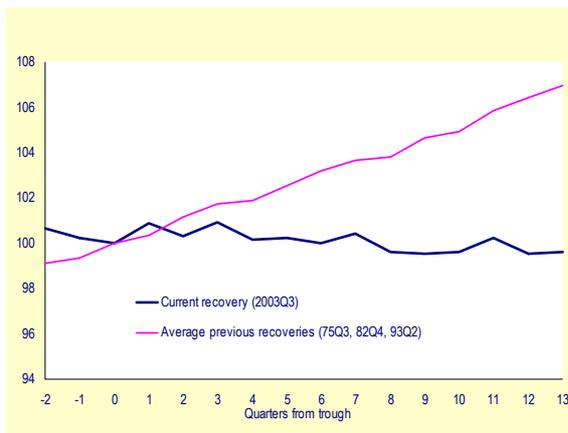
³³ There is some evidence that the euro and financial integration have allowed Member States with bigger financing needs (i.e. catching-up economies) to tap international capital markets more easily. See Quarterly Report on the Euro Area, Vol. 5, No 4 (2006).

³⁴ All these causes were already explored in Quarterly Report on the Euro Area Vol. 5 No3 2006.



More specifically, twelve quarters after the start of the current upswing average real wage growth (as measured by the annualized quarter-on-quarter growth rate of compensation per employee) turns out to be slightly negative at -0.1%, compared to average growth of 2.1% in the previous three recoveries (Graph 29).

Graph 29: Real wages across cycles, euro area
(Index=100 at trough)



Source: Commission services.

Moderate increases in wages did not prevent private consumption from being supportive of domestic demand in 2006

With consumer confidence on an upward trend since mid-2005 and real disposable income improving in line with favourable labour market developments, consumer spending is benefiting from supportive conditions. In 2006 the labour market improved considerably in the euro area. After four years of subdued growth at around 0.7% per year, employment growth accelerated to around 1.4% in 2006, representing some 2 million new jobs. Meanwhile, the euro-area unemployment rate pursued its downward course, reaching 7.4% in January 2007.

With real consumption wages moderating at a time when the outlook for employment growth is brighter, the question arises as to the relative importance of the two components of the real wage bill (wage rate and employment) in driving real private consumption. Whereas it is often stressed that moderate real wage growth contributes to the weakness of private consumption, it is obviously more appropriate to

emphasize the role of the total real wage bill (i.e. real wages multiplied by employment) in the transmission channels from labour market developments to aggregate consumption. In recent years, growth in the total wage bill in the euro area has been boosted by strong employment creation. Furthermore, econometric analysis presented in a previous issue of this report suggests that employment growth is a more important determinant of households' private consumption than the growth of real wages per employee.³⁵

3. Short and medium-term outlook

In the short term there are increasing signs of tightening labour market conditions

In line with brightening economic conditions, employment expectations remain high. According to the Commission's Autumn 2006 Forecasts, total employment will grow by 1.2% and 1.1% in 2007-2008. The unemployment rate is set to drop further, albeit modestly, to 7.7% and 7.4% of the labour force in the euro area in 2007-2008. Although structural unemployment is forecast to fall further in 2007 and 2008, the unemployment gap (i.e. the gap between actual and structural unemployment rates) is expected to close over that period, meaning that, at least in the short term, there are increasing signs of tightening labour market conditions.

Lessons from the past suggest that the evolution of unit labour costs in the euro area fits well with the unemployment gap.³⁶ Nevertheless, the quantitative impact of a diminishing unemployment gap on wage inflation will depend on a number of factors. On the one hand, in the current context of brisk employment growth, trade unions could aim to reverse the decline in the wage share that has taken place over an extended period by demanding wage increases beyond productivity trends.

³⁵ Quarterly Report on the Euro Area, Vol. 5, No 1 (2006), pp. 15-20.

³⁶ See Quarterly Report on the Euro Area, Vol. 5, No 4 (2006), pp.4.

On the other hand, although the incidence of automatic wage indexation has reduced in the past few years and the threat of second-round effects has not been confirmed so far,³⁷ close monitoring of wage-setting behaviour on a country basis will be required in the immediate future so as to add credibility to the scenario of moderate wage growth. Specifically, after stabilising at around 2% in the past three years, the Commission's Autumn 2006 Forecasts indicate some slight wage growth acceleration in the short term (to 2.2% in 2007 and 2.5% in 2008) due to new wage agreements being implemented in selected euro-area countries, namely Germany, Belgium, Ireland and the Netherlands. More generally, even if the evolution of wages in 2007 is not a major cause of concern, some upward risks could arise in 2008 which should therefore be identified well ahead.

In the medium term several factors are likely to ease labour cost pressures

In the medium term, three main factors could put a lid on labour cost pressures.

Firstly, a stronger than expected reduction in the structural unemployment (or NAIRU), owing to the unfolding of recent reforms can increase flexibility in both labour and product markets.

Secondly, labour market reforms designed to enhance labour force growth can help to alleviate inflation pressures emanating from the supply side. Overall, labour force growth appears to have been relatively strong between 2001 and 2005. This is partly due to immigration, but it also reflects an underlying increase in participation, especially among the younger and older age groups. Looking ahead, however, labour force growth is expected to decelerate and in some cases even turn negative, owing to the projected slowdown in working age population growth. In that respect, economic policy must play an important role in supporting

the developments of the labour force, for example by providing incentives to older males to delay retirement and by supporting flexible contracts that allow the youth and prime-age women in particular to reconcile study and family life with work. Measures aimed at enhancing labour mobility and the reallocation of labour from declining firms or sectors to expanding ones can be expected to alleviate labour market bottlenecks.

Thirdly, the likely favourable contribution of labour productivity growth, should the recent rebound turn out to be of a structural nature, could partly or totally offset the effect of higher wage demands on inflation.³⁸ The latest data show that labour productivity in the euro area has averaged an annualised rate of 1.6% since the beginning of 2006, compared with an average change of rate of 0.7% during the previous decade. The jury is still out on whether the recent rebound in productivity is purely cyclical or whether it contains an element of trend reversal to weakening productivity dynamics observed over the past decade. On the one hand, part of the recent increase in labour productivity growth could be regarded as transitory, on the basis that its pro-cyclical behaviour may be reflecting the lagged response of employment - a quasi-fixed production factor- to output growth. On the other hand, ongoing reform efforts in product and labour markets as part of the renewed Lisbon strategy, combined with a rising investment/GDP ratio and in particular productivity-enhancing ICT investment, may also have led to structural improvements, setting the path for moderate unit labour cost growth. The fact that the ongoing acceleration is broadly based across the larger euro-area Member states, most notably Germany, France and Spain, and that it comprises sectors, i.e. services, conventionally less sensitive to the business cycle, provides support for the hypothesis that the productivity revival is not solely due to a cyclical recovery. To conclude, the evolution of trend productivity growth will be key to determining the respective role of wages and productivity in the adjustment process.

³⁷ Globalization and increased product market competition brought about by the effective completion of the internal market in the EU may have adversely affected the bargaining power of workers and the capacity of firms to increase mark-ups in tradable sectors, thereby dampening the extent to which oil price increases can trigger second-round effects.

³⁸ For further details on the assessment of recent labour productivity developments, see Box 1 in the Quarterly Report on the Euro Area, Vol. 5, No 4 (2006).



Improving labour market outcomes: interplay between market forces and institutions

Two main policy considerations can be drawn from the analysis of recent and prospective developments in labour costs. First, price stability at euro-area level requires wages to grow at a pace compatible with the sum of trend productivity and the price stability target of the ECB of close to but below 2%. Second, employment-friendly intra-euro-area adjustments require higher flexibility of wages and prices.

Putting these policy considerations into operation must take due account of the fact that wage and labour cost developments are the result of a highly complex interplay of social partners and market forces. Put differently, the responsibility of well-adapted wage-setting process continues to fall primarily into the domain of the social partners, limiting the direct influence government policy can exercise over wage bargaining outcomes. Reference might be made in this context to the respective guideline in the Growth and Jobs Strategy (guideline 4), which states that '*Member States should encourage the right framework conditions for wage-bargaining systems, while fully respecting the role of the social partners, with a view to promote nominal wage and labour cost developments consistent with price stability and the trend in productivity over the medium term, taking into account differences across skills and local labour market condition*', and is particularly suited to providing policy recommendations at the present juncture.

Against this institutional background, two factors should be considered. *First, wage developments should be closely monitored in the coming years as inflationary pressures stemming from the labour market cannot be ruled out in a number of countries.* The first part of this section has argued that at the aggregate level, short/medium-term prospects do not point to any imminent danger for stability-conducive wage settlements. However, this mild overall risk assessment dramatically alters when broken down to individual country level. This is particularly the case of Italy, Portugal, Spain and Greece, which in order to regain intra-area competitiveness will have to keep unit labour costs growth below the euro-area average.

Second, a major role will be played by structural reforms in facilitating smooth intra-euro-area competitiveness adjustments. Structural reforms aimed at boosting productivity are of paramount importance if the whole burden of adjustment is not to fall on wages. The re-launch of the Lisbon strategy with more clearly focused objectives, and the recent boost in productivity are positive signals that the euro-area adjustment capability has a good chance of improving over time. Euro-area Member States have started to address many reform areas that are important to stimulate growth and jobs. This is documented in the Annual Progress Report of December 2006. Promising reforms have been undertaken, or have been envisaged, to increase labour participation rates, boost R&D and innovation, develop human capital and create a more attractive business environment, notably through policies improving the quality of regulation.

However, further progress is needed in the area of the structural reforms to increase the adjustment capacity of the euro area. On 8/9 March 2007, the European Council endorsed the 2007 update of the Integrated Guidelines.³⁹ For the euro area, these include, most prominently, strengthening budgetary consolidation in good times, reviewing public expenditures and taxation with the aim of enhancing innovation, implementing measures that improve competition, especially in services, and improving flexibility and security on labour markets by aligning wage and productivity developments more closely and by enacting measures to promote labour mobility across borders and between occupations.⁴⁰

4. Conclusions

This focus report has presented evidence of wage moderation making a favourable contribution to price stability in the euro area. However, recent wage developments have recorded sizeable differences across euro-area countries that have led to persistent price-competitiveness imbalances and widening

³⁹ Since the relaunch of the Lisbon Strategy in 2005, the Integrated Guidelines combine the Broad Economic Policy Guidelines (Art. 99(2)) and the Employment Guidelines (Art. 128(4)).

⁴⁰ See Section 3 in this issue on 'The Lisbon Agenda for the euro area: the 2007 update of the Integrated Guidelines'.

dispersion of current account positions, reflecting, *inter alia*, difficulties several Member States are having aligning wage increases with productivity developments. Thus, over and above wage moderation, there is a need for the relative competitive positions to be rebalanced among the countries participating in the monetary union. The challenge here is to further enhance wage flexibility at country level and thus speed up adjustment through smooth, employment-friendly dynamic processes. Rebalancing competitive positions among euro-area countries will necessarily mean that those countries which need to regain intra-area competitiveness have to keep unit labour cost growth below the euro-area average.

Looking further ahead, subdued wage growth so far should not lead to complacency. Given the foreseeable tightening of labour market conditions, it is crucial for the social partners to continue to assume their responsibilities. Price stability will require wage agreements at national level to take account of intrinsic trend productivity developments, the cyclical situation of labour markets and the underlying position in relative price competitiveness within the euro area. Finally, the rules-based and stability-oriented macroeconomic policy framework of EMU, and the heightened credibility of monetary policy should underpin the scenario of wage moderation.



Focus

III. The reduced volatility of output growth in the euro area

The volatility of euro-area output growth has declined significantly since the 1970s. The fall has been somewhat less sharp than in the US but volatility was and remains lower in the euro area than in the US. The average euro-area picture conceals substantial heterogeneity at the individual country level. Most Member States experienced a pronounced drop in volatility in the late 1970s or 1980s. In some of them, the trend was partly and temporarily reversed in the late 1980s or early 1990s due to strong idiosyncratic shocks. In recent years, however, the volatility of output growth has been quite low by historical standards in most Member States.

The decline in volatility has been broad based across the different GDP components, except for net exports where volatility has actually increased. However, the fall has not been uniform. Probably reflecting improved inventory management, changes in inventories have played a central role in the process. Investment has also been an important contributor. As regards sectoral volatility, the reduction has been widespread throughout the economy but the progressive shift of the production structure from goods to services in the euro area only explains a fraction of the reduced volatility. Studies on the US economy have tended to downplay the contribution of macroeconomic policies to the decline in output volatility in that country. It is likely, however, that both fiscal and monetary policy have played a more prominent role in the euro area where changes in the macroeconomic framework have been far more comprehensive than in the US. Finally, and contrary to the US, the possible impact of financial market integration on GDP volatility remains so far difficult to discern in aggregate euro-area macroeconomic data.

There is a broad consensus today that output growth in the US has become noticeably less volatile over the past 20 years (see Box 4). This decline has also occurred, to varying degrees, in other industrialised countries.⁴¹ While there are numerous empirical studies on the decline of output volatility for the United States, the corresponding research for the euro area is sparse and restricted to certain euro-area Member States. The aim of this focus is to assess the extent of the decline in volatility in the euro area and to look at its possible determinants.

After analysing developments in output growth volatility in the euro area (Section 1), the focus examines the changes in the volatility of GDP components and sectoral value added (Section 2 and 3). It then discusses the role of monetary and fiscal policy as possible determinants of the reduction of output volatility (Section 4). A final

section discusses briefly the role of shocks (Section 5).

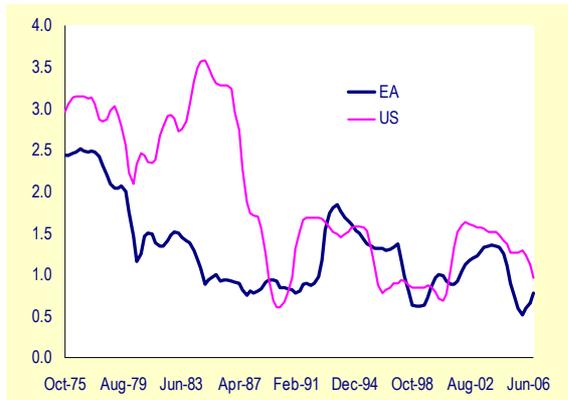
1. Output volatility in the euro area

To analyse output volatility, standard deviations of the euro-area and US GDP growth rates were computed for rolling windows of 5 years (Graph 30). Over the past 30 years, the volatility of output growth has declined substantially in the euro area, from 1.93% in the period 1970Q1-1979Q4 to 1.06% in the most recent period (1996Q4-2006Q3). The drop has been somewhat less sharp in the euro area (0.86 pp) than in the US (1.32 pp). However, the US economy posted a much higher level of output growth volatility than the euro area in the 1970s and, despite some convergence over the past three decades, still posts a higher level now.

While both the US and the euro area experienced a fall in output volatility, the patterns and timings look very different. A clear break in US output volatility series is clearly discernible around the mid-1980s. No such break is discernible in the case of the euro area. The reduction in output volatility seems to have started earlier in the euro area, around the mid-70s, it was partly reversed from the late-80s to mid-90s and resumed afterwards.

⁴¹ For studies on the G7 countries see for instance Stock, J. H., and Watson, M. W. (2003), 'Has the Business Cycle Changed? Evidence and Explanations, Federal Reserve Bank of Kansas City, pp. 9-56. Another reference for G7 countries is Barrell, R. and S. Gottschalk (2004), 'The volatility of the output gap in the G7', NIESR Discussion Paper No. 230. For OECD countries, see Cotis, J.P. and J. Coppel (2005), 'Business Cycle dynamics in OECD Countries: Evidence, Cases and Policy Implications', OECD, Paper presented at the Reserve Bank of Australia Economic Conference.

Graph 30: **Rolling 5-year standard deviation of y-o-y GDP growth rates, euro-area and the US**
(in % – 1975Q4-2006Q4)



Source: Commission services.

The absence of a clear break in the case of the euro area can be explained by the fact that volatility developments did not follow the same pattern in all euro-area Member States. Table 9 shows the standard deviations of output growth for each country. While there is clear evidence of a reduction in output volatility in all euro-area Member States, the magnitudes and timings differ substantially from one country to another. Some Member States experienced a much stronger decrease than the euro area as a whole (Greece, Italy and Spain) and others a more moderate decrease (France and Germany). In general, the biggest reduction occurred in those countries which posted the highest output volatility in the 1970s.

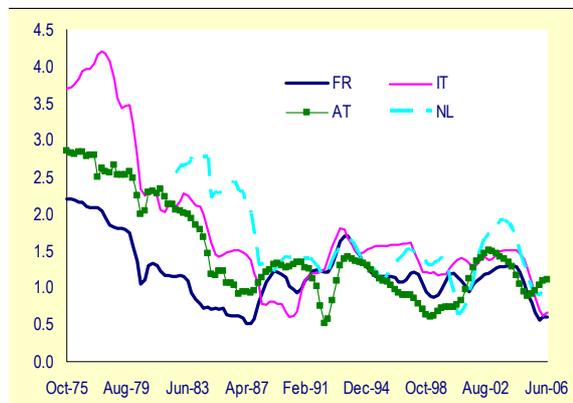
Looking at volatility developments in individual countries, two main groups can be identified. The first one includes countries where volatility decreased sharply in the late 1970s and 1980s but where there has been little change over the last 15 years. This group includes Austria, France, Italy and possibly the Netherlands (for which quarterly data are available for a shorter period) (Graph 31).⁴²

The second group includes countries where the decrease in volatility was temporarily reversed by powerful idiosyncratic shocks in the late 1980s or early 1990s. This group includes Finland, Germany, Greece and Spain (Graph 32).

Country-specific shocks such as the German unification and the collapse of the Soviet Union generated boom-and-bust cycles, which brought a temporary halt to the trend decline in volatility. After these interruptions, output volatility in the four countries resumed its downward trend.

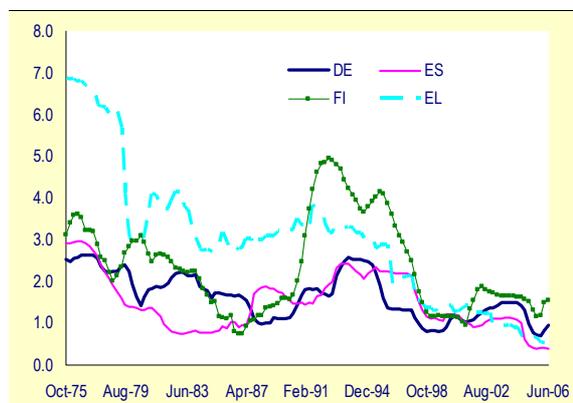
Whatever the group considered, the volatility of output growth has been quite low by historical standards in most Member States in recent years (Finland stands as a major exception).

Graph 31: **Standard deviation of y-o-y GDP growth, Austria, France, Italy and the Netherlands**
(in % – 5-year rolling windows – 1975Q4-2006Q4)



Source: Commission services.

Graph 32: **Standard deviation of y-o-y GDP growth, Finland, Germany, Greece and Spain**
(in % – 5-year rolling windows – 1975Q4-2006Q4)



Source: Commission services.

⁴² Quarterly data for the Netherlands are only available since 1977.



Table 9: Standard deviation of y-o-y GDP growth in euro-area Member States (in %) (1)

	1970Q1-1979Q4	1980Q1-1989Q4	1990Q1-1999Q4	1997Q1-2006Q4	Difference between 1970Q1-1979Q4 and 1997Q1-2006Q4 (2)
BE	N.A	1.59	1.68	1.27	-0.31
DE	2.13	1.73	1.94	1.26	-0.87
EL	5.44	3.19	2.59	0.97	-4.46
ES	2.92	1.99	2.03	0.88	-2.04
FR	1.72	1.15	1.26	1.09	-0.63
IT	3.28	1.45	1.38	1.30	-1.99
NL	N.A	2.44	1.50	1.62	-0.81
AT	2.58	1.50	1.10	1.23	-1.35
FI	3.14	1.70	4.06	1.74	-1.40
EA	1.93	1.34	1.28	1.07	-0.86
US	2.62	2.64	1.48	1.30	-1.32

(1) IE, LU and PT are excluded owing to lack of quarterly data.

(2) The difference for BE and NL is between 1997Q1-2006Q4 and 1980Q1-1989Q4.

Source: Commission services.

Table 10: Standard deviation of the contributions of GDP components to changes in GDP, euro area (in %)

	1970Q1-1979Q4	1980Q1-1989Q4	1990Q1-1999Q4	1997Q1-2006Q4	Difference 1997Q1-2006Q4 vs. 1970Q1-1979Q4
Private consumption	0.70	0.79	0.71	0.53	-0.17
Government cons.	0.12	0.13	0.23	0.11	-0.01
Investment	0.87	0.80	0.76	0.54	-0.33
<i>Of which (1):</i>					
<i>Construction</i>		0.38	0.30	0.21	-0.16
<i>Housing</i>		0.21	0.14	0.11	-0.09
<i>Equipment</i>		0.51	0.59	0.39	-0.11
Inventories	1.30	0.56	0.50	0.34	-0.96
Net exports	0.56	0.86	0.64	0.63	0.07

(1) The investment breakdown is based on data for DE, ES, FR, IT, NL, FI.

Source: Commission services.

2. Volatility of GDP components

An easy way to learn more about the sources of the decline in output growth volatility is to decompose GDP into its main components. Table 10 displays the standard deviation of the contribution of each component to changes in real GDP over the indicated time periods.

The decline in output growth volatility appears to have been broad-based across the different GDP components (except for net exports where volatility has increased) but it has not been uniform. By far, the biggest contributor to the reduction in volatility in the euro area was inventories. Based on covariance estimates, inventories have accounted for nearly 70% of the decline in GDP volatility since the 1970s.⁴³

⁴³ The variance of GDP can be decomposed into the sum of the covariances of GDP with each of its individual components. In this setting, the fall in the covariance of inventories with GDP between the 1970s and the most

Today, inventories are less volatile but also less pro-cyclical than in the 1970s.

This is in line with existing studies on the US economy which identify stocks as one of the main explanations for the decline in volatility in that country.⁴⁴ Despite their small share in total GDP, inventories have proved in the past to have a strong impact on the business cycle due to their pro-cyclicality. Today, the picture is rather different. Improvements in inventory management techniques have taken place. The increased use of information technology and

recent period (1997-2006) can be interpreted as the contribution of inventories to the decline in GDP volatility. Based on this formula, nearly 70% of the drop in the variance of GDP can be attributed to inventories.

⁴⁴ See, for example Blanchard, O., and J. Simon (2001), 'The Long and Large Decline in U. S. Output Volatility', Brookings Papers on Economic Activity, Vol. 32 (No 1), pp. 135-64.

Table 11: Variances of y-o-y growth, euro area (in %)

	1970Q1- 1979Q4	1980Q1- 1989Q4	1990Q1- 1999Q4	1993Q4- 2003Q3	Difference 1993Q4-2003Q3 vs. 1990Q1- 1999Q4
Consumption	1.5	1.9	1.5	1.0	-0.5
Real Disposable income (Yd)					
Of which:	2.0	1.9	2.8	1.3	-0.7
<i>Real wage bill (2)</i>	1.1	1.3	1.8	1.2	0.1
Savings rate term (β) (1)	0.9	0.4	0.6	0.5	-0.4
2×Covariance (Yd, β)	-1.4	-0.6	-1.8	-0.9	0.6

(1) The savings rate term β is equal to $-(s_t - s_{t-4}) / (1 - s_{t-4})$. Growth in consumption is equal to growth in real disposable income plus the β term. The variance of consumption growth is equal to the sum of the variances of Yd and β and 2 times the covariances between Yd and β .

(2) Variance of the contribution of the real wage bill to real disposable income.

Source: Commission services, ECB.

more flexible production methods have made for 'just-in-time' production. These developments have considerably reduced inventory fluctuations.⁴⁵

Investment and, to a lesser degree, private consumption are, after inventories, the largest contributors to the decline in output volatility. The two components account, respectively, for 22% and 36% of the drop in GDP volatility since the 1970s.⁴⁶ This means that consumption has contributed to the drop by much less than its weight in GDP, whereas the opposite holds for investment.

The decline of investment volatility started in the 1970s while the decline in consumption volatility is much more recent (in the 1990s). As a consequence, the fall in volatility in the 1970s and 1980s seems to have been more industry (and supply) related, with both inventories and investment volatility decreasing.

Unfortunately, detailed investment data have only been available since the 1990s for the euro area. To expand time coverage, a proxy for detailed euro-area investment has been computed by aggregating data for six euro-area countries (DE, ES, FR, IT, NL, FI). The resultant breakdown suggests that all the main investment sectors (housing, equipment and infrastructure) have played a role in the drop in volatility with contributions that broadly reflect their weight in total investment. In the empirical

⁴⁵ A statistical caveat is necessary, however. In some countries, the inventory component of GDP is used as the adjustment variable to make the GDP identity hold. In that case, the inventory component captures not only changes in stocks but also errors in the measurement of other GDP components.

⁴⁶ According to the same covariance calculations.

literature, residential investment has been put forward as a major contributor to the reduction in volatility in the US.⁴⁷ There is however no evidence of a similar prominent role for housing in the euro area. Volatility in housing investment has declined but it does not seem to have played a leading role in the overall decline in GDP volatility so far.

Looking further into private consumption, the recent fall in the standard deviation of consumption growth may be the consequence of a lower variability of disposable income, a lower variability of the savings rate or consumption smoothing (i.e. the fact that fluctuations in the savings rate tend to offset fluctuations in the disposable income). With more developed financial markets, consumers can cushion against domestic shocks by borrowing and lending and thus achieve a more stable consumption path. In the case of the euro area, this form of consumption smoothing seems to have played a minor role in the recent decline of consumption volatility (Table 11). The volatility of the savings rate seem to have declined somewhat but the fall has been offset by stronger comovements with disposable income. In fact, the savings rate played a more counter-cyclical role in the recession of the 1990s than in the downturn of the early 2000.

Overall, the main contributor to the drop in the volatility of consumption growth over the past decade was disposable income. The fall in the volatility of disposable income can result from changes in the volatility of: (i) labour income; (ii) non-labour income; and (iii) government

⁴⁷ See for example Gordon R. J. (2005), 'What Caused the Decline in US Business Cycle Volatility?', NBER Working Papers 11777.



Table 12: Standard deviations of y-o-y gross added value growth by sector (in %) (1)

	1970Q1-1979Q4	1980Q1-1989Q4	1990Q1-1999Q4	1996Q4-2006Q3	Difference 1993Q4-2003Q3 vs. 1990Q1-1999Q4
Agriculture	3.53	3.13	3.26	6.25	2.72
Industry	3.82	2.65	3.00	2.11	-1.71
Construction	3.15	3.16	3.20	1.98	-1.17
Services	1.43	0.85	0.89	0.87	-0.56

(1) Gross value added estimates for the euro area are based on data of six euro-area countries.

Source: Commission services.

transfers or taxes. Table 10 shows that labour income did not play a big role in stabilising disposable income in the latest period. Since quarterly data for the other two variables are not available, it is not possible to discriminate between the other different variables. It is worth noting, however, that the decreased volatility of disposable income is a-priori consistent with a more stabilising role of fiscal policy (via transfers and taxes) in the 1990s.

Neither government consumption nor net trade contributed much to lowering output volatility. The volatility of government consumption has remained stable over the last 35 years while volatility of net trade has increased slightly.

The aggregate euro-area picture is confirmed at individual country level. Most euro-area Member States have experienced a sharp decrease in the volatility of their inventories. Investment and private consumption have also decreased but more moderately. While the fall in inventories and investment volatility was continuous and started in the 1970s in all countries, the timing of the decrease in consumption volatility differed appreciably from one country to another. In some countries, the decline started in the 1970s (France and Finland) while in others it was more pronounced in the latest period (Germany and Italy).

Overall, two major conclusions can be drawn from the analysis of GDP components. First, most of the reduction in volatility may be ascribed to inventories and investment. Second, the role of financial market integration and financial deepening is difficult to discern in the GDP component data. The strong contribution of both private consumption and housing to the drop in volatility in the US is sometimes taken as evidence of the key role of financial markets in this process. Unfortunately, the evidence from consumption and housing is much less compelling in the euro area than in the US. This

is not to deny the substantial progresses made in terms of financial integration in the euro area in recent years. But the activity smoothing effect of financial integration on household spending remains difficult to discern in aggregate macroeconomic data at this juncture.⁴⁸

3. Sectoral volatility

Further insight into the sources of reduced output volatility can be gained from analysing the sectoral decomposition of GDP. Eurostat's quarterly national accounts provide a breakdown of the euro-area's total value added into four sectors: agriculture, industry, construction and services. With this decomposition, it is possible to see whether the reduction in volatility of GDP growth has been widespread throughout the economy, or whether it has been limited to certain sectors.

Table 12 presents the standard deviations of growth in the four sectors for the same time periods as in previous tables.⁴⁹ The only sector where volatility has increased since the 1970s is agriculture. All three other sectors have experienced a decline in volatility. The service sector is by far the least volatile. This is not surprising, as the most cyclical components of final demand (inventories, investment and trade)

⁴⁸ Investment seems to have been an important contributor to the reduced output volatility. This reduced volatility could be partly the result of reduced financial constraints as financial markets have become more integrated. See for instance Becker, B. and J. Sivadasan (2006), 'The effect of financial development on the investment-cash flow relationship: Cross country evidence from Europe', ECB Working Paper No 689.

⁴⁹ The euro-area aggregates were constructed as the sum of the gross value added of six euro-area Member States for which quarterly data were available since 1970 (Austria, Finland, France, Germany, Italy and Spain).

play a comparatively much smaller role for services than for other sectors.⁵⁰

While the reduction in output volatility may be traced back to a decrease in volatility in individual sectors, sectoral shifts in production may also have played a role. Indeed, the share of services in the economy's total value added increased by about 12 percentage points between 1970 and 2005. Given that services are less volatile than other sectors, this shift should have helped to reduce overall GDP volatility on top of the reduction in volatility observed in most sectors. One method of assessing the magnitude of this effect consists in calculating the volatility of GDP growth that would have been observed if the weight of each sector had been fixed at its 1970 level. Performing a similar calculation with sectoral weights fixed at their 2005 level, and comparing the two estimates, will give an idea of the magnitude of changes in structures.

For the euro area, these estimates suggest that the shift in shares from industry to services over the period between 1970 and 2005 can only explain about 10% of the drop in GDP volatility over that period. In other words, the contribution of the sectoral shift has been limited.

Finally, it is worth noting that, although the shift towards services seems to have played only a minor role in the fall in output volatility at euro-area level, the picture is rather different at Member State level. Indeed, using the same method, the shift in shares between 1970 and 2005 can explain around 30% of the drop in volatility in Germany but only 3% in France.

4. Improved macroeconomic policies

Most US studies have tended to downplay the contribution of macroeconomic policies to the moderation of volatility in that country. There is, however, reason to believe that macroeconomic policies have played a bigger role in the euro area. Changes in the macroeconomic framework and macroeconomic management have probably

been more substantial in the euro area than in the US over the past three decades. Furthermore, a striking feature of the fall in the volatility of growth in the euro area is that it has been substantially more pronounced in countries such as Italy, Spain and Greece where macroeconomic management was probably comparatively less effective in the 1970s and part of the 1980s. Finally, although no empirical research is available for the euro area as a whole, there is some (limited) research on Germany also pointing in that direction. Applying spectral analysis, Buch, Doepke and Pierdzioch (2002) find that a non-negligible part of the change in output volatility in that country can be attributed to changes in economic policy.⁵¹

What role for fiscal policy?

There are reasons to believe that fiscal policy may have contributed significantly to the reduction in output growth volatility in the euro area over the past two decades by better smoothing fluctuations in activity. Increasing cyclical stabilisation may have come from improvements in the working of the two main channels of fiscal policy, namely automatic stabilisers and discretionary fiscal policy.

The size of automatic stabilisers may depend on the size of the government sector but also on the tax structure, the progressiveness of the tax system, the generosity of unemployment benefits and the sensitivity of unemployment to fluctuations in output. The larger the automatic stabilisers, the more cyclical fluctuations will be smoothed.

There is some indirect empirical evidence of a link between government size and the smoothing power of automatic stabilisers. Fatás and Mihov (2001) report a strong negative correlation between government size and the volatility of GDP growth across OECD countries.⁵² The effect is not simply due to the fact that government expenditure tends to be

⁵⁰ See Focus 'The growing importance of services in the euro-area economy', Quarterly Report on the Euro Area, Vol. 5, No 2 (2006).

⁵¹ Buch, C. M., Doepke, J. and Pierdzioch, C. (2002), 'Business cycle volatility in Germany', Kiel Working Paper No 1129.

⁵² Fatás, A. and I. Mihov (2001), 'Government size and automatic stabilisers: international and intranational evidence', *Journal of International Economics*, 55 (2001), pp. 3-28



more stable than private expenditures as the negative relationship also holds when real GDP is replaced by private-sector output. After running a battery of cross-checks the authors conclude that the negative relation is probably related to the strength of automatic stabilisers.

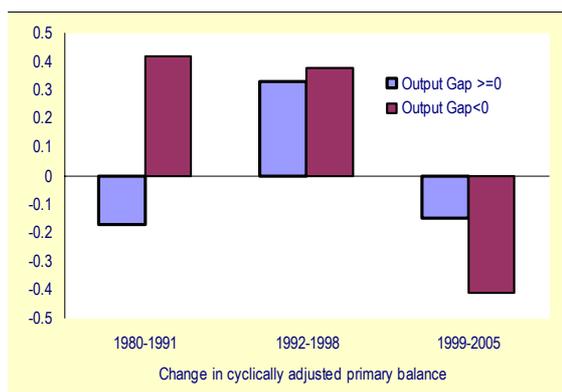
In contrast to the US, the size of the government in the euro area, measured by general government expenditures as a percentage of GDP increased the 1970s and 1980s. Therefore, there are reasons to believe that the size of the stabilisers has also increased, helping to better smooth cyclical fluctuations.

Turning to the second channel, there is also evidence that improvements in the conduct of discretionary fiscal policy have contributed to the reduction in output growth volatility. In some Member States, the discretionary component of fiscal policies tended to be highly volatile in the 1970s and 1980s with periods of strong expansions followed by periods of sharp tightening (stop and go policies). More generally, budgetary policies in the euro area were then characterised by a relatively high degree of pro-cyclicality and were therefore a source of cyclical amplification rather than cyclical stabilisation.

There is, however, evidence that the conduct of budgetary policy has improved with EMU even if some elements of pro-cyclicality persist, most notably in good times. For instance, Gali and Perotti (2003) find that discretionary fiscal policy in euro-area countries has become more counter-cyclical since 1992.⁵³ Graph 33 also clearly points in that direction. It shows whether fiscal policy in the euro area has been pro-cyclical or counter-cyclical in good times (positive output gap) or bad times (negative output gap). For instance, in good times, fiscal policy is pro-cyclical if there is a decrease in the cyclically adjusted primary balance (CAPB) and counter-cyclical if there is an increase. The chart shows that, in the 1980s, discretionary fiscal policies were pro-cyclical both in good and bad times. Things have tended to improve in the 1990s with some evidence of counter-cyclicality in good times but still substantial pro-cyclicality

in bad times. Since the launch of the euro budgetary policy has been counter-cyclical in bad times although elements of pro-cyclicality in good times remain.⁵⁴

Graph 33: Average fiscal stance in good and bad times, euro area (in % of GDP)



Source: Commission services.

Overall, fiscal policy is likely to have contributed to the fall in output growth volatility in the euro area since the 1970s both because of a possible rise in the potency of automatic stabilisers and because of a lessening of the fiscal policy mistakes of the past.

A more effective monetary policy

Changes in the conduct of monetary policy are another possible source of decline in output volatility. Recent research on the US economy has generally downplayed the contribution of monetary policy to the decline in output growth in that country (see Box 4). For instance, Stock and Watson (2003) find that less than 10% of the moderation in volatility is attributable to improved monetary policy. For Gordon (2005) monetary policy also played a modest role. Nevertheless, it should be borne in mind that these results are based on estimates of Taylor rules and thus capture only part of the changes in monetary policy over the past 35 years. For instance, changes in the credibility of monetary

⁵³ Gali, J and R. Perotti (2003), 'Fiscal policy and monetary integration in Europe', *Economic Policy*, 18 (37), pp. 533-572.

⁵⁴ European Commission (2006), Directorate-General for Economic and Financial Affairs, 'Public Finances in EMU', *European Economy*, No 3/2006.

Box 4: The decline in output growth volatility in the US

It is now a well documented fact that output in the US has become noticeably less volatile in the last twenty years. Using different econometric techniques, most studies identify a structural break in US output volatility in 1984 (McConnell, M. and G. Perez-Quiros (2000), Stock and Watson (2003) and Gordon (2005)). However, Blanchard and Simon (2001) argue that this decline, although it was temporarily halted during the 1970s, can be traced back at least to the 1950s.

The existing literature offers different possible explanations for lower output volatility, but there is not real consensus on the causes of the observed decrease in US GDP volatility.

Looking at GDP components, all empirical studies analysed here conclude that the fall in volatility was widespread throughout all demand components and not limited to a particular component. Blanchard and Simon (2001) and Stock and Watson (2003) find that the largest relative decline in volatility occurred in the cyclically sensitive housing sector. Blanchard and Simon (2001) and Gordon (2005) find evidence that inventories contributed to lower output volatility but this conclusion is disputed by Stock and Watson (2003). Concerning government spending, Gordon (2005) identified it as being by far the biggest contributor to lower volatility. Stock and Watson (2003) also find that federal government spending contributed to lower output volatility but it was certainly not the main driver. For instance, it contributed less than consumption. Blanchard and Simon (2001) also identify a sharp decrease in the volatility of government spending, but in the 1950s, after the Korean War.

The role of the shift in the sectoral composition of output is also investigated in a number of papers. For Stock and Watson (2003), the shift away from manufacturing and towards services reduced the variance of GDP growth, but not by much. The estimated contribution of the sectoral shift is 8% for the US. This finding is consistent with Blanchard and Simon (2001). Compared to the other two papers, Gordon (2005) finds that a larger part (roughly 20 percent) of the reduction in business-cycle volatility was due to shifts in shares toward more stable components (consumption of services) and away from more volatile components (consumption of non-durable goods).

Another hypothesis is that the moderation of output volatility in the US may have been the result of improvements in the conduct of monetary policy. Blanchard and Simon (2001) find a strong relation between movements in output volatility and inflation volatility. Given that increased inflation stability is likely to be the result, in large part, of better monetary policy, the authors conclude that more effective monetary policy may have contributed to the reduction of business cycle volatility. Stock and Watson (2003) argue that although improved monetary policy played a key role in bringing inflation under control, it accounted for only a small fraction of the reduction in the volatility of output growth. They estimate that the Fed's more aggressive response to inflation since the mid-1980s has contributed less than 10% to the decline in output volatility. For Gordon (2005) monetary policy also played only a modest role in the moderation of output volatility.

Less frequent and smaller shocks have been put forward in the empirical literature on the decline in GDP volatility in the US as being one of the most important factors for the reduction in volatility. For Gordon (2005), for instance, the reduced variance of both demand and supply shocks was the dominant source of reduced business cycle volatility in the US. About two-thirds of the reduced volatility of the output gap is attributed to demand shocks, and the remainder to supply shocks. Stock and Watson (2003) conclude that most of the moderation is the result of an unusually quiet period, with soft macroeconomic shocks and no major supply disruption.

Overall, there is not real consensus on the relative importance of each determinant in the observed decrease in US GDP volatility. However, it appears to be widespread throughout the US economy. Residential investment, government spending, improved inventory management, changes in production structures and better monetary policy have all contributed to the observed decline in US GDP volatility. Nevertheless, most studies seem to concur in ascribing a large part of the decline to the reduced variance of macroeconomic shocks.

References:

- Blanchard, O. and J. Simon (2001), 'The Long and Large Decline in US Output Volatility,' *Brookings Papers on Economic Activity*, Vol. 32 (No 1), 135-64.
- Gordon, R. J. (2005), 'What Caused the Decline in U. S. Business Cycle Volatility?' NBER Working Papers 11777.
- McConnell, M. and G. Perez-Quiros (2000), 'Output fluctuations in the United States; what has changed since the early 1980s?', *American Economic Review* 90(5), pp. 1464-1476.
- Stock, J. H., and M. W. Watson, (2003), 'Has the Business Cycle Changed? Evidence and Explanations', *Federal Reserve Bank of Kansas City*, pp. 9-56.



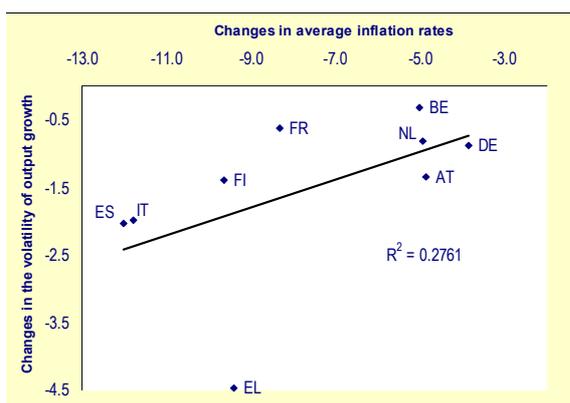
authorities and in inflationary expectations are not addressed by these models. This suggests that the conclusion of a modest contribution of monetary policy to the drop in output growth volatility in the US should be interpreted with prudence.

In any event, although no empirical research is available on the issue, there are reasons to believe that monetary policy may have made a more substantial contribution to the fall in output growth volatility in the euro area than in the US:

First, EMU has entailed a far-reaching change in the monetary regime in the euro area. In contrast, changes in the conduct of monetary policy have been much more limited in the US.

Second, it is important to note that there is a striking negative correlation between inflation levels and output growth volatility within the euro area. Those Member States which have experienced the largest fall in the level of inflation since the 1970s are also those which have experienced that largest fall in output volatility (Graph 34).

Graph 34: Changes in output growth volatility and inflation levels, euro-area Member States (changes between 1970-79 and 1997-06 – in pp)



Source: Commission services.

Overall, it is worth stressing that, since 1999, the ECB has been quite successful in stabilising inflation expectations. This is important since once long-run inflation expectations are anchored, monetary policy can act as a more effective tool for stabilising output. Indeed, stable inflation expectations eliminate an

important source of macroeconomic instability, namely the possibility that shocks which affect inflation in the short term become amplified through a corresponding adjustment in inflation expectations.

5. Shocks and good luck

The final question to answer is whether the fall in output volatility is a permanent phenomenon or whether it was just the consequence of good luck in the form of reduced macroeconomic shocks. In the empirical literature, a number of authors have tried to answer that question by estimating small VAR or structural models and testing whether the observed decline in volatility is attributable to changes in the structure of the economy (i.e. changes in the estimated coefficients of the model) or to smaller shocks (i.e. smaller residuals in the equations). This research has generally concluded that most of the decline in output volatility since the 1970s is attributable to smaller shocks rather than changes in the structure of the economy. For instance, in the case of the US, Gordon finds that the reduced variance of both demand and supply shocks was the dominant source of reduced business cycle volatility. About two-thirds of the reduced volatility of the output gap is attributed to demand shocks, and the remainder to supply shocks.⁵⁵

In the case of euro-area countries, based on a counterfactual VAR analysis, Buch, Doepke and Pierdzioch (2002) find evidence that smaller shocks have also, in the case of Germany, been behind the decline in output volatility.

When assessing to what extent the reduction in volatility is attributable to good luck, the conclusions from these studies should, however, be interpreted with caution, for two reasons.

First, the fact that shocks are estimated to have become smaller in parsimonious VAR or structural models does not tell us much about how lasting the reduction will be. Shocks being defined as error terms, they encapsulate everything that is not captured by the

⁵⁵ This seems to corroborate our results on the reduced variances of inventories and investment as strong contributors to the decline in output volatility.

(parsimonious) model. Therefore, any improvement in economic structures or policies that is not explicitly captured in a model will be measured as a reduction in shocks. For instance, improvements in inventory management or in the conduct of budgetary policies will be captured as a reduction in demand shocks. In other words, a reduction in the size of shocks in these small models is not necessarily the effect of temporary good luck but may be the result of changes in the structure of the economy or in macroeconomic policies.

Second, the fact that the magnitude and frequency of shocks has decreased over the past two decades is somewhat at odds with our experience of evolving economic conditions. For instance, since the late 1990s, euro-area economies have been hit by a large number of shocks, including surging oil prices, the bursting of the ICT bubble and sharp gyrations in equity prices. However, the impact of these shocks on volatility seems to have been moderate.

Overall, whereas good luck in the form of smaller shocks may have contributed to the reduction in volatility in the euro area, the analysis presented in the previous sections suggests that structural changes in the economy (better inventory management, increasing importance of services) and better macroeconomic management have probably played a key role. In other words, a large part of the decline in volatility in the euro area is likely to be of a durable nature rather than a reflection of temporary good luck. Further research would, however, be necessary to disentangle more clearly the respective contributions of shocks and structural or policy changes.

6. Conclusions

The fall in output volatility in the euro area seems to share some similarities with developments in the US. On the demand side, less volatile inventories and housing investments in the euro area have played an important role in reducing output volatility. On the supply side, the reduction in output volatility appears to be widespread throughout the economy's main sectors. The progressive shift of the production structure from goods to services in the euro area only explains a fraction of the reduced volatility.

At the same time, differences between the euro area and the US are also evident. The downward trend is less clear-cut in the euro area than in the US, due to heterogeneous developments at country level. Some euro-area countries experienced a sharp reduction in volatility during the 1970s and 1980s but little change over the last 15 years. Other countries were exposed to idiosyncratic shocks which momentarily interrupted the decline in volatility in the late 1980s or early 1990s. Better economic policy has probably played a larger role in the euro area than in the US due to more comprehensive changes in the monetary and fiscal frameworks. Finally, in contrast to the US, the contribution of financial market integration is difficult to identify so far in aggregate euro-area macroeconomic data.

Overall, although a reduction in the size of shocks may also have played a role, a large part of the decline in output growth volatility in the euro area seems to reflect structural changes and improved macroeconomic policy.



IV. Recent DG ECFIN publications

1. Policy documents

EUROPEAN ECONOMY. No. 4. 2006

Long-term sustainability of public finances in the European Union

http://europa.eu.int/comm/economy_finance/publications/european_economy/2006/ee0406sustainability_en.htm

EUROPEAN ECONOMY. No. 5. 2006

Economic forecasts autumn 2006

http://europa.eu.int/comm/economy_finance/publications/european_economy/forecasts_en.htm

EUROPEAN ECONOMY. No. 6. 2006

The EU Economy 2006 Review

http://europa.eu.int/comm/economy_finance/publications/european_economy/2006/the_eu_economy_review2006_en.htm

EUROPEAN ECONOMY. OCCASIONAL PAPERS. No. 27. November 2006

Countries Country Study: Growth and competitiveness in the Polish economy: the road to real convergence

http://europa.eu.int/comm/economy_finance/publications/occasional_papers/occasionalpapers27_en.htm

EUROPEAN ECONOMY. OCCASIONAL PAPERS. No. 28. February 2007

Country Study: Raising Germany's growth potential

http://europa.eu.int/comm/economy_finance/publications/occasional_papers/occasionalpapers28_en.htm

EUROPEAN ECONOMY. SPECIAL REPORT. No. 3. 2006

Annual statement and report on the euro area

http://ec.europa.eu/economy_finance/publications/european_economy/2006/eespecialreport0306_en.htm

EUROPEAN ECONOMY. SPECIAL REPORT. No. 4. 2006

Labour market and wage development in 2005, with special focus on labour market adjustment in the euro area

http://ec.europa.eu/economy_finance/publications/european_economy/2006/eespecialreport0406_en.htm

EUROPEAN ECONOMY. ENLARGEMENT PAPERS. No. 29. 2006

Progress towards meeting the economic criteria for accession: the assessments of the 2006 Progress Reports

http://ec.europa.eu/economy_finance/publications/enlargement_papers/elp29_en.htm

EUROPEAN ECONOMY. ENLARGEMENT PAPERS. No. 30. 2006

Western Balkans in Transition

http://ec.europa.eu/economy_finance/publications/enlargement_papers/elp30_en.htm

2. Analytical documents

EUROPEAN ECONOMY. ECONOMIC PAPERS. No. 264.

Michael P. Devereux (Oxford University) and Peter Birch Sørensen (University of Copenhagen)

The Corporate Income Tax: international trends and options for fundamental reform

http://europa.eu.int/comm/economy_finance/publications/economic_papers/economicpapers264_en.htm

EUROPEAN ECONOMY. ECONOMIC PAPERS. No. 265.

Marcel Gérard (Catholic University of Mons)

Reforming the taxation of multijurisdictional enterprises in Europe: a tentative appraisal

http://europa.eu.int/comm/economy_finance/publications/economic_papers/economicpapers265_en.htm

EUROPEAN ECONOMY. ECONOMIC PAPERS. No. 266.

Marco Ratto, Werner Roeger, Jan in't Veld (European Commission)

Fiscal policy in an estimated open-economy model for the Euro area

http://europa.eu.int/comm/economy_finance/publications/economic_papers/economicpapers266_en.htm

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http://europa.eu.int/comm/economy_finance/publications/economic_papers/economicpapers272_en.htm

EUROPEAN ECONOMY. ECONOMIC PAPERS. No. 273.

Luis Gordo Mora (Banco de España) and João Nogueira Martins (Directorate-General for Economic and Financial Affairs)

How reliable are the statistics for the Stability and Growth Pact?

http://europa.eu.int/comm/economy_finance/publications/economic_papers/economicpapers273_en.htm

3. Regular publications

Euro area GDP indicator (Indicator-based forecast of quarterly GDP growth in the euro area)

http://europa.eu.int/comm/economy_finance/indicators/euroareagdpend.htm

Business and Consumer Surveys (harmonised surveys for different sectors of the economies in the European Union (EU) and the applicant countries)

http://europa.eu.int/comm/economy_finance/indicators/businessandconsumersurveys_en.htm

Business Climate Indicator for the euro area (monthly indicator designed to deliver a clear and early assessment of the cyclical situation)

http://europa.eu.int/comm/economy_finance/indicators/businessclimate_en.htm

Key indicators for the euro area (presents the most relevant economic statistics concerning the euro area)

http://europa.eu.int/comm/economy_finance/indicators/key_euro_area/keyeuroarea_en.htm

Monthly and quarterly notes on the euro-denominated bond markets (looks at the volumes of debt issued, the maturity structures, and the conditions in the market)

http://europa.eu.int/comm/economy_finance/publications/bondmarkets_en.htm

Price and Cost Competitiveness

http://europa.eu.int/comm/economy_finance/publications/priceandcostcompetitiveness_en.htm



V. Key indicators for the euro area

		2003	2004	2005	Sep-06	Oct-06	Nov-06	Dec-06	Jan-07	Feb-07
1 Output										
Industrial confidence ^{1.1}	Balance	-11	-5	-8	4	5	6	6	5	5
Industrial production ^{1.2}	mom. % ch	0.5	2.0	1.3	-0.9	0.0	0.3	1.2	-0.2	
		2003	2004	2005	05Q3	05Q4	06Q1	06Q2	06Q3	06Q4
Gross domestic product ^{1.3}	Qtr. % ch				0.6	0.4	0.8	1.0	0.6	0.9
2 Private consumption										
Consumer confidence ^{2.1}	Balance	-18	-14	-14	-8	-8	-7	-6	-7	-5
Retail sales ^{2.2}	mom. % ch	0.1	0.2	1.0	-0.8	0.1	0.6	0.3	-1.0	
		2003	2004	2005	05Q3	05Q4	06Q1	06Q2	06Q3	06Q4
Private consumption ^{2.3}	Qtr. % ch	1.3	1.4	1.4	0.7	0.1	0.6	0.3	0.7	0.6
3 Investment										
Capacity utilization ^{3.1}	%	80.7	81.6	81.3	80.9	81.1	82.0	82.5	83.6	83.9
Gross fixed capital formation ^{3.2}	Qtr. % ch	1.0	2.1	2.7	1.3	0.4	0.8	2.1	0.6	1.2
Change in stocks ^{3.3}	% of GDP	0.0	-0.1		0.0	0.4	0.0	0.3	0.2	
4 Labour market										
Unemployment ^{4.1}	%	8.4	8.9	8.5	7.7	7.6	7.5	7.5	7.4	
		2003	2004	2005	05Q3	05Q4	06Q1	06Q2	06Q3	06Q4
Employment ^{4.2}	Ann. % ch	0.4	0.6	0.7	0.7	0.8	1.0	1.4	1.5	1.6
Shortage of labour ^{4.3}	%	2.5	2.4		2.1	2.8	2.8	3.1	4.4	5.0
Wages ^{4.4}	Ann. % ch	2.5	2.2		2.2	2.1	2.5	2.9	2.7	2.5
5 International transactions										
Export order books ^{5.1}	Balance	-24	-13	-16	2	2	3	4	2	5
World trade ^{5.2}	Bn. EUR	132	146	157	177	178	179	178	182	
Exports of goods ^{5.3}	Bn. EUR	1056.0	1142.1	1232.5	120.3	119.6	120.6	124.6		
Imports of goods ^{5.4}	Bn. EUR	970.4	1069.1	1207.3	118.0	117.8	116.2	123.9		
Trade balance ^{5.5}	Bn. EUR	85.6	73.0	25.2	2.3	1.8	4.4	0.7		
		2003	2004	2005	05Q3	05Q4	06Q1	06Q2	06Q3	06Q4
Exports of goods and services ^{5.6}	Qtr. % ch	1.1	6.8	4.2	2.5	0.7	3.1	0.9	1.8	3.7
Imports of goods and services ^{5.7}	Qtr. % ch	3.1	6.7	5.2	2.0	1.5	2.3	0.8	2.2	1.9
		2003	2004	2005	Sep-06	Oct-06	Nov-06	Dec-06	Jan-07	Feb-07
Current account balance ^{5.8}	Bn. EUR	18.1	42.4	38.8	1.5	1.5	4.6	5.0		
Direct investment (net) ^{5.9}	Bn. EUR	-18.4	-39.7	-41.8	-27.1	-15.3	-13.0	-28.3		
Portfolio investment (net) ^{5.10}	Bn. EUR	-9.4	39.0	32.3	44.2	22.5	45.5	39.6		
6 Prices										
HICP ^{6.1}	Ann. % ch	2.1	2.2	2.2	1.7	1.6	1.9	1.9	1.8	1.8
Core HICP ^{6.2}	Ann. % ch	2.0	2.1	1.5	1.5	1.6	1.6	1.6	1.8	1.9
Producer prices ^{6.3}	Ann. % ch	1.6	2.3	4.1	4.6	4.0	4.3	4.1	2.9	
Import prices ^{6.4}	Ann. % ch	102.5	97.2	104.8	113.5	111.2	110.9			
7 Monetary and financial indicators										
Interest rate (3 months) ^{7.1}	% p.a.	2.3	2.1	2.2	3.2	3.3	3.4	3.4	3.6	3.7
Bond yield (10 years) ^{7.2}	% p.a.	4.1	4.1	3.4	3.8	3.8	3.7	3.8	4.0	4.1
ECB repo rate ^{7.3}	% p.a.	3.25	2.75		3.25	3.25	3.50	3.50	3.50	3.75
Stock markets ^{7.4}	Index	2420	2805	3207	109	113	115	116	118	119
M3 ^{7.5}	Ann. % ch	7.8	5.9	7.4	8.4	8.8	9.3	9.8	9.8	
Credit to private sector (loans) ^{7.6}	Ann. % ch	5.0	6.0	8.1	11.5	11.2	11.2	10.7	10.6	
Exchange rate USD/EUR ^{7.7}	Value	1.13	1.24	1.24	1.27	1.26	1.29	1.32	1.30	1.31
Nominal effective exchange rate ^{7.8}	Index	106.4	109.8	109.7	112.4	112.0	112.6	114.1	113.4	113.8

Number	Indicator	Note	Source
1	Output		
1.1	Industrial confidence indicator	Industry survey, average of balances to replies on production expectations, order books, and stocks (the latter with inverted sign)	ECFIN
1.2	Industrial production	Volume, excluding construction, wda	Eurostat
1.3	Gross domestic product	Volume (1995), seasonally adjusted	Eurostat
2	Private consumption		
2.1	Consumer confidence indicator	Consumer survey, average of balances to replies on four questions (financial and economic situation, unemployment, savings over next 12 months)	ECFIN
2.2	Retail sales	Volume, excluding motor vehicles, wda	Eurostat
2.3	Private consumption	Volume (1995 prices), seasonally adjusted	Eurostat
3	Investment		
3.1	Capacity utilisation	In percent of full capacity, manufacturing, seasonally adjusted, survey data (collected in each January, April, July and October).	ECFIN
3.2	Gross fixed capital formation	Volume (1995 prices), seasonally adjusted	Eurostat
3.3	Change in stocks	In percent of GDP, volume (1995 prices), seasonally adjusted	Eurostat
4	Labour market		
4.1	Unemployment	In percent of total workforce, ILO definition, seasonally adjusted	Eurostat
4.2	Employment	Number of employees, partially estimated, seasonally adjusted	ECB/ Eurostat
4.3	Shortage of labour	Percent of firms in the manufacturing sector reporting a shortage of labour (unfilled job openings) as a constraint to production, seasonally adjusted	ECFIN
4.4	Wages	Not fully harmonised concept, but representative for each Member State (mostly hourly earnings)	ECFIN
5	International transactions		
5.1	Export order books	Industry survey; balance of positive and negative replies, seasonally adjusted	ECFIN
5.2	World trade	Volume, 1998=100, seasonally adjusted	CPB
5.3	Exports of goods	Bn. EUR, excluding intra euro-area trade, fob	Eurostat
5.4	Imports of goods	Bn. EUR, excluding intra euro-area trade, cif	Eurostat
5.5	Trade balance	Bn. EUR, excluding intra euro-area trade, fob-cif	Eurostat
5.6	Exports of goods and services	Volume (1995 prices), including intra euro-area trade, seasonally adjusted	Eurostat
5.7	Imports of goods and services	Volume (1995 prices), including intra euro-area trade, seasonally adjusted	Eurostat
5.8	Current account balance	Bn. EUR, excluding intra euro-area transactions; before 1997 partly estimated	ECB
5.9	Direct investment	(net) Bn. EUR, excluding intra euro-area transactions	ECB
5.10	Portfolio investment	(net) Bn. EUR, excluding intra euro-area transactions	ECB
6	Prices		
6.1	HICP	Harmonised index of consumer prices	Eurostat
6.2	Core HICP	Harmonised index of consumer prices, excluding energy and unprocessed food	Eurostat
6.3	Producer prices	Without construction	Eurostat
6.4	Import prices	Import unit value index for goods	Eurostat
7	Monetary and financial indicators		
7.1	Interest rate	Percent p.a., 3-month interbank money market rate, period averages	Ecwin
7.2	Bond yield	Percent p.a., 10-year government bond yields, lowest level prevailing in the euro area, period averages	Ecwin
7.3	ECB repo rate	Percent p.a., minimum bid rate of the ECB, end of period	Ecwin
7.4	Stock markets	DJ Euro STOXX50 index, period averages	Ecwin
7.5	M3	Seasonally adjusted moving average (3 last months)	ECB
7.6	Credit to private sector (loans)	MFI loans to euro-area residents excluding MFIs and general government, monthly values: month end values, annual values: annual averages	ECB



7.7	Exchange rate USD/EUR	Period averages	ECB
7.8	Nominal effective exchange rate	Against 13 other industrialised countries, double export weighted, 1995 = 100, increase (decrease): appreciation (depreciation)	ECFIN

Contributors to this issue are:

Recent economic developments and short-term prospects

C. Brzeski and L. González Cabanillas

Is the yield curve still predicting recessions?

C. Brzeski and M. Vesterlund

The Lisbon Agenda for the euro area: the 2007 update of the Integrated Guidelines

M. Thiel

Focus: The contribution of labour cost developments to price stability and competitiveness adjustment in the euro area

*G. Carone, D. Paternoster,
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K. Pichelmann*

Focus: The reduced volatility of output in the euro area

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